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Summary



United States
Department of
Agriculture

Forest Service

Tongass
National Forest
R10-MB-310c

February 1996



Northwest Baranof Timber Sales

Final Environmental Impact Statement

Summary and Record of Decision



**United States
Department of
Agriculture**



National Agricultural Library

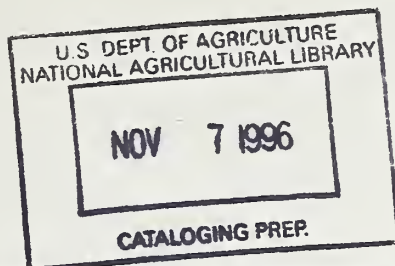


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Reply To: 1950

Date: February 5, 1996

Dear Reviewer:

Attached is the Record of Decision (ROD) for the Northwest Baranof timber sales. If you requested complete documentation of this decision, the following items were included in the package:

Summary and Record of Decision
Volume I: Final Environmental Impact Statement
Volume II: Unit Cards, Road Cards, and Silvicultural Diagnoses
Map packet

If you requested the summary documentation of this decision, the package should include only the Summary and Record of Decision along with the map packet. Volume II has been printed in limited numbers to reduce printing and distribution costs. If you would like to have a copy of Volume II, let us know and we will try to meet your needs. Copies of the complete Final Environmental Impact Statement (EIS) are available for review at Forest Service offices and public libraries throughout Southeast Alaska.

The ROD documents my final decision on the selection of an alternative, and the factors considered in reaching the decision. The effective date of implementation for the decision and the notice of rights of appeal are also specified in the ROD.

I want to thank those of you who took the time to review and comment on the Draft EIS, and also those who participated in the subsistence hearings. Your interest in the management of the Tongass National Forest is appreciated. I also want to extend a special thank you to those who requested the summary documentation of this decision in lieu of the entire set of the Final EIS.

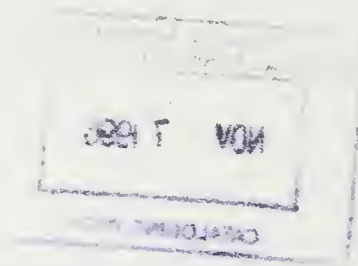
Sincerely,

GARY A. MORRISON
Forest Supervisor

Enclosures

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Summary

Summary

Project Overview

In compliance with Federal regulations, the USDA Forest Service has prepared this Environmental Impact Statement (EIS) for proposed timber harvest and related activities in the Northwest Baranof Project Area. The Project Area is located on the Sitka Ranger District of the Chatham Area, Tongass National Forest (See Figure S-1).

This EIS follows the format established in the Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508). In this document, we disclose the physical, biological, economic, and social consequences of five alternatives, including the no-action alternative.

Purpose and Need

The purpose and need for the Northwest Baranof Project is (1) to implement direction contained in the Tongass Land Management Plan (TLMP), as amended (USDA Forest Service 1979, 1986, 1991), (2) to help provide a timber supply from the Tongass National Forest consistent with sound multiple use and sustained yield objectives, (3) to help meet market demand for the timber industry in Southeast Alaska, and (4) to help provide employment in the wood products industry throughout Southeast Alaska. The Northwest Baranof Project is expected to provide between 30 and 100 mmbf of timber, given the guidance in the TLMP.

The TLMP assigned Land Use Designation (LUD) IV to approximately 38 percent of the Project Area. This designation provides for intensive resource use and development with an emphasis on commodity resources such as timber. The TLMP assigned LUD III to the other 62 percent of the Project Area. LUD III provides for a variety of uses, including timber production. In addition, the TLMP scheduled timber sale preparation for all Management Areas in the Project Area. A comparison of the desired future condition for the Project Area, as reflected in the TLMP direction, with the existing condition shows the need to convert suitable stands of old-growth timber to managed productive stands capable of long-term timber production.

Section 101 of the Tongass Timber Reform Act of 1990 (TTRA) directs that the USDA Forest Service shall ". . . to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle." Section 101 of the TTRA specifies that Forest Service efforts to seek to meet market demand are subject to appropriations, National Forest Management Act of 1976 (NFMA) requirements, and other applicable law. Providing a timber supply from the Tongass for sustained local wood products industry employment and related economic and social benefits is an objective of the TLMP, the Alaska National Interest Lands Conservation Act

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(ANILCA), as amended by the TTRA, and the Ketchikan Pulp Company (KPC) long-term contract.

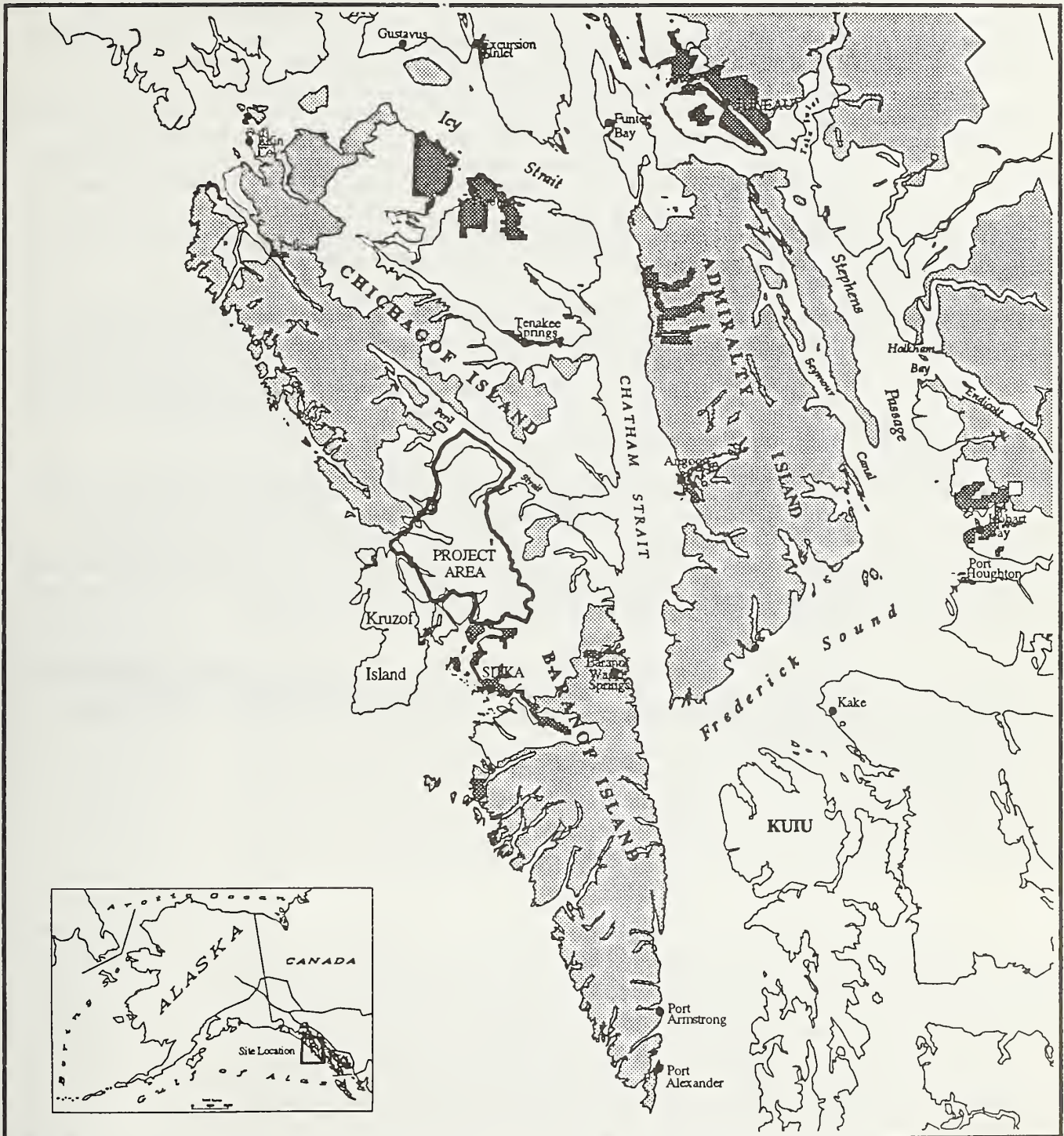
Two indicators of market demand are used in further defining the need. First, the price of bids for timber in the region remains high. Independent sales continue to sell for more than the appraised value. This reflects the national and world demand for timber. Second, there is a demonstrated mill capacity in the region to process the logs, if the supply of timber is available. Timber volume from this Project Area may help the Forest Service come closer to meeting the objective of providing a three-year supply of timber to the existing dependent industry. This supply is a means of providing for stability in relation to fluctuating market demand (Morse 1995, Brink 1995). A substantial component of the economy of Southeast Alaska is dependent on a viable timber industry. Based on these factors, there is a clear need for the project.




At this time, the timber volume from the Northwest Baranof Project is scheduled to be made available as independent timber sales. However, timber volume from the Project Area could be made available as one or more KPC long-term contract offerings. (See the "Background" section later in this Summary.)

Project Area

The Project Area is located in the Tongass National Forest at the northwest end of Baranof Island. It lies approximately five miles north of Sitka, Alaska and encompasses 156,003 acres. The Project Area includes the major watersheds of Rodman Creek, Fish Bay Creek, and Nakwasina River. It also includes the lands on Baranof Island bordered by Nakwasina Sound, Nakwasina Passage, Neva Strait, and Peril Strait (Figure S-1).

Figure S-1
Vicinity Map



-  Project Boundary
-  Land Allocated to Wilderness or Roadless Management
-  Land Ownership or Selection other than National Forest

8 4 0 8 16
Scale in Miles



Background

The Project Area was, until recently, part of the Alaska Pulp Corporation (APC) long-term timber sale contract area. In 1957, the Forest Service entered into a long-term timber sale contract with the Alaska Lumber and Pulp Company (later renamed Alaska Pulp Corporation). On September 30, 1993, APC ceased operation of its Sitka pulp mill, whereupon the Forest Service terminated the long-term timber sale contract with APC on April 14, 1994. Termination of the APC contract shifted the focus for making timber available in the Project Area from long-term timber sale contract offerings to competitive independent timber sales. Since the termination of the APC contract, the Forest Service has continued to assess market demand for timber in Southeast Alaska as part of its independent timber sale program. This market assessment continues to affirm demand for timber volume in Southeast Alaska (Morse 1995, Brink 1995).

As a consequence of the termination of the APC long-term contract, timber that was previously committed to APC contract is now available for Ketchikan Pulp Company (KPC) under its long-term contract. KPC operates a pulp mill and a sawmill in Ketchikan and a sawmill in Metlakatla. It is projected that offerings to KPC from the Stikine and Chatham Areas will be needed to help meet KPC long-term contract volume requirements (Arrasmith 1995).

Sale offerings currently scheduled, undergoing NEPA evaluation, or at some other stage in the preparation process are projected to be needed to help meet the KPC long-term contract and independent sale program's supply objectives. If any currently planned independent sales were converted to KPC contract offerings, equivalent volume currently planned for KPC contract offerings would likely be needed for independent sale offerings in order to meet the projected need for independent sale volume.

The first offerings from the Project Area could be made available in 1996 to help meet either independent sale program or KPC long-term contract supply objectives. The Northwest Baranof Project is currently scheduled to be implemented as independent timber sales.

Issues To Be Addressed

The NEPA requires Federal agencies to determine the scope of the issues to be addressed and to identify the significant issues related to the proposed action. For the Northwest Baranof Project, these issues were identified through the scoping process described in the previous section. Issues were raised by the public, which included individuals; organizations; other Federal, State, and local agencies; and affected Indian Tribes. Some of these issues were identified through scoping within the Forest Service and relate to concerns about specific resources and legal requirements.

We analyzed the issues raised during scoping and grouped similar issues when appropriate. We determined the following issues to be significant and within the scope of the project. In formulating alternatives we considered each of the issues and addressed them in some manner in all alternatives. We considered two additional issues but eliminated them from detailed study because their resolution falls outside the scope of the Northwest Baranof Project (see next section for a discussion of these issues).

Fish Habitat and Water Quality

The fish habitat and water quality of the streams on the Tongass National Forest contribute to the economic, recreational, and subsistence needs of Southeast Alaska residents. Stream habitat provides important shelter, hiding places, food, and rearing areas for salmon. Changes in stream habitat due to logging or road construction could alter a stream's ability to produce fish.

Past logging has adversely affected fish habitat in some rivers and streams north of Sitka. The streams within the Project Area support many salmon. Maintaining, enhancing, and rehabilitating fish habitat are important concerns for many Sitka residents.

Wildlife Habitat and Populations

The Project Area supports a wide variety of wildlife species. Two species of particular concern are Sitka black-tailed deer and mountain goat. A stable, huntable population of deer is important for many Sitka residents. The maintenance of adequate deer winter range is critical for deer survival. Logging may reduce available winter habitat for deer and may contribute to reduced deer populations in some areas over the long term. Increased access to goat winter range at the headwaters of Noxon Creek and Nakwasina River as a result of additional road construction could cause increased hunting of the goat herd.

Old Growth

Old-growth forests are valuable because of their biological diversity, wildlife habitat, recreation opportunities, scenic quality, soil productivity, and water quality. These forests are also a source of high-quality timber. Balancing these important but conflicting values of old-growth forests is an important and difficult management problem. In addition, fragmentation of isolated old-growth forest tracts caused by natural conditions and logging activities, the size of old-growth patches, and the corridors that connect old-growth patches, are important factors in managing wildlife habitats and for biological diversity. Old-growth fragmentation due to road construction and logging is a concern.

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Marine Environment

Marine fish and shellfish productivity may be affected by the location and design of LTFs and log storage areas, and by bark accumulations that may occur as a result of their use. A specific concern is the possible adverse effect of the proposed LTF in St. John Baptist Bay on the juvenile sablefish population that lives there. In addition, the proposed LTFs in Nakwasina Passage and Sound may adversely affect crabbing in those areas.

Marine mammal populations may be affected by the location of LTFs and the activity associated with logging and log transportation. For example, a seal haul-out near the proposed LTF at Noxon Creek may be affected.

Subsistence

Maintaining subsistence opportunities on Baranof Island is of concern to many rural residents. This area is used for hunting, trapping, fishing, gathering, and other customary and traditional use. Subsistence supplements the diets of many people and is the primary source of food for some. For Native Americans in Southeast Alaska, subsistence resources are important for the preservation of cultural customs and traditions. The subsistence lifestyle involves deeply-held values, attitudes, and beliefs of both Native and non-Native people.

The location and size of logging camps are of concern because of the potential for increased competition for subsistence resource for the duration of their use. In addition, access provided by logging roads may increase competition with Sitka residents for hunting, trapping, fishing, and gathering.

Recreation

Outdoor recreation opportunities are important to the quality of life for many Southeast Alaska residents. Dense rain forests, abundant fish and wildlife, and miles of protected waterway combined with the vast and remote character of the area provide a unique setting for quality recreation experiences. Logging, road construction, and related activities will alter some recreational settings for the short term and the long term.

The lack of roads and the necessity for access from saltwater provide a unique recreational setting appreciated by visitors and residents alike. Difficult terrain, dense vegetation, and limited anchorages confine many recreational activities to accessible shorelines. LTFs, log storage areas, and logging camps located in these popular areas may displace recreational use during logging. Popular areas that could be affected include Schulze Cove, St. John Baptist Bay, and Nakwasina Passage.

Road construction and reconstruction have the potential for opening new areas for road-related recreation. Management objectives for roads after logging will determine if access is to be maintained for short term or long term. Although some people desire additional motorized recreational opportunities, others may oppose opening more areas to motorized use.

Scenic Quality

Travelers along the route of the Alaska Marine Highway view dense spruce and hemlock rain forests, abundant fish and wildlife, rugged mountains, secluded fjords and bays, and miles of protected waterways. The unique natural setting and outstanding scenery are an important component of the visitors' experience. Tourism has diversified the economy of Sitka, and maintaining the scenic quality of the landscape is of concern to both visitors and the community. Timber harvest has the potential for affecting the scenery along the Alaska Marine Highway route.

Many people have chosen to live in or visit Sitka because of the opportunity to work or play in an area with outstanding scenic quality. Fish Bay, St. John Baptist Bay, Nakwasina Passage, and Nakwasina Sound provide many opportunities for saltwater recreation and small boat travel. Harvest units, roads, and LTFs may have an adverse affect on the scenery in these areas.

Economic and Social Quality

The lifestyles, values, and quality of life for the residents of Southeast Alaska are highly dependent on the surrounding National Forest. The forests of the Project Area provide a valuable setting for recreation, hunting, fishing, and subsistence use. They also provide a setting for people seeking a remote, uncrowded living condition and for Native residents seeking to maintain customary and traditional uses. Timber harvests and road construction may have an adverse affect on the quality of life for some people.

The forests of the Project Area are also an economic resource for Southeast Alaska and the community of Sitka. They are valuable as a setting for commercial recreation and tourism, and the streams provide spawning habitat for salmon, a resource for a large commercial fishing industry. There is concern that widespread timber harvest and road construction would have an adverse affect on these important industries.

Furthermore, the forests provide valuable timber that may be used to support a wood products industry. Currently, there is not a major wood processing industry in Sitka, and many residents oppose clearcut logging in the Sitka area. However, there is also a strong interest in establishing a small wood products industry for the Sitka area. On a larger scale, logging provides jobs for many workers in Southeast Alaska. Timber harvested in the forests around Sitka may be processed at many sites in Southeast Alaska to meet local, national, and international demand for wood products. The closure of the Sitka pulp mill contributed to a shortage of easily accessible firewood for Sitka. This may result in increased demand for free use or commercial timber harvest.

The amount of timber to be harvested and its value compared to logging costs is a concern. This is particularly true if small amounts of timber are to be harvested with expensive roads or yarding systems. Furthermore, the communities of Southeast Alaska receive payments from the Forest Service in lieu of taxes for income generated from the National Forest. The primary source of these payments has been timber sales. As timber harvests decrease, the payments in lieu of taxes may also decrease.

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Heritage Resources

The Project Area lies largely within an area traditionally claimed by the Sitka Tlingit. Because of the importance of this area in preserving the Tlingit culture and traditional values, the Forest Service has worked closely with the Sitka Tribe of Alaska to identify sites of cultural importance. Once identified, the Forest Service can protect these sites by avoiding them when planning and implementing management activities.

Furthermore, the National Historic Preservation Act (NHPA) directs Federal agencies to take into account the effect of proposed actions on historic properties. Historic properties are those properties included in or eligible for inclusion in the National Register of Historic Places. Federal regulations also require a "Section 106 review" for proposed actions. In response to this issue, we have completed the NHPA Section 106 review for all timber harvest related activities proposed by the action alternatives. This included units, roads, and LTFs. As a result of this review we have avoided all known heritage resource sites in the Project Area or otherwise specified stipulations to protect them.

Alternative Development

In this EIS, five alternatives explore ways to satisfy public concerns and resolve the issues described earlier in this Summary. These include a no-action alternative and four action alternatives. Each of the action alternatives responds differently to the issues. The action alternatives were developed as site-specific proposals, the environmental consequence of which could be clearly displayed. Collectively the alternatives were developed to explore ways to consider public concerns and resolve issues, while responding to the purpose and need for the project. From this range of alternatives, the Forest Supervisor has a basis for making an informed decision.

In developing the harvest units and road systems for this Project, we followed direction, standards, and guidelines contained in the current TLMP, Alaska Regional Guide, and applicable Forest Service manuals and handbooks. The first step in formulating alternatives was the development of a logging plan that identified timber harvest units and the associated road systems that could be assigned to any of the alternatives. This unit and road "pool" was carefully examined in the field and reviewed by the ID Team before it was finalized. Next we determined various options to address the issues and identified various approaches or "themes" that could serve to guide the alternatives. After further review, we finalized the alternative themes, assigned specific units and roads to each alternative, and insured that each alternative considered in detail is consistent with the current TLMP. Finally we have identified mitigation measures, enhancement projects, and the monitoring requirements which are listed in Appendix A of the Final EIS.

The Interdisciplinary (ID) Team looked at the proposed harvest units from two levels: the landscape level, which considers effects of management practices over large areas (such as VCUs, watersheds, or viewsheds); and the stand level, which deals with individual harvest units. At the landscape level, we maintain large tracts of undisturbed old growth by concentrating timber harvest in certain areas, and by using beach and estuary fringe and stream buffers for corridors between old-growth blocks.

At the stand level, we reduced harsh edges by unit placement and feathering edges of cutting units, and provided for stand diversity by leaving snags in harvest units (where

safety regulations allow) or retaining small patches of uncut timber in harvest units (where feasible and practical). We considered all of these concepts during the selection and design of individual harvest units and roads, and the assignment of these to specific alternatives.

Alternatives Considered in Detail

We considered five alternatives (four action alternatives and a no-action proposal) in detail. Each alternative was developed to respond differently to the issues, and to provide a range of choices for the Forest Supervisor and the public. We have included maps (distributed with this EIS) which illustrate the proposed roads and harvest units for each of the five alternatives.

For each action alternative, there is a discussion of the theme or intent of the alternative. Following the description of the alternatives, there is a discussion of post-harvest silvicultural treatments, enhancement opportunities, and mitigation measures. Table S-1 summarizes the volume and acres of timber harvest, logging systems, harvest methods, and roads proposed for development and use. Also see the alternative maps for greater detail.

Alternative 1

This alternative represents the “proposed action” as presented during public scoping and described earlier in this Chapter. It has been modified since public scoping to reflect harvest units dropped from further consideration because of resource concerns. This alternative distributes timber harvest throughout the Project Area. It proposes timber sales in seven individual geographic areas within the Project Area: two locations in Rodman Bay, Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Sound, and Lisa Creek. There will be an LTF for each of the seven individual geographic areas, with the exception of Nakwasina Sound. At this location, logs will be placed directly in the water by helicopter. Alternative 1 proposes timber harvest on 1,739 acres with an output of approximately 36.4 mmbf of sawlog volume. In this alternative, 50 percent of the acres cut (16.5 mmbf) will be harvested using a helicopter logging system. In addition, 51 percent of the acres will be harvested using a harvest method other than clearcutting.

Alternative 1 maintains wildlife habitat and subsistence resources along the north shores of Nakwasina Passage and St. John Baptist Bay, and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. Opportunity for increased motorized vehicle, bicycle, and foot access would be provided on the road system south of St. John Baptist Bay.

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Alternative 2

This alternative concentrates timber harvest in three areas that have had previous logging activity: Rodman Bay, St. John Baptist Bay, and Lisa Creek. It also minimizes further fragmentation of old growth as a result of additional timber harvest, especially in and adjacent to the Fish Bay and Nakwasina River watersheds. This alternative maintains the existing conditions in approximately 70 percent of the Project Area by deferring timber harvest in areas which have seen only limited harvest in the past. Alternative 2 proposes timber harvest on 2,501 acres with an output of approximately 51.9 mmbf of sawlog volume. In this alternative, 67 percent of the acres cut (33.2 mmbf) will be harvested using a helicopter logging system. In addition, 60 percent of the acres will be harvested using a harvest method other than clearcutting.

Alternative 2 maintains wildlife habitat and traditional subsistence use areas at the head of Nakwasina Sound, along the north shores of Nakwasina Passage and St. John Baptist Bay and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Deadman Reach to St. John Baptist Bay. Logging economics would be improved by using reconstructed roads in this alternative. LTFs will be located in Appleton Cove, Rodman Bay, St. John Baptist Bay, and Lisa Creek.

Alternative 3

This alternative concentrates timber harvest in the north end of the Project Area with logging at Schulze Cove and Rodman Bay. It also defers timber harvest in those portions of the Project Area closest to Sitka. This alternative emphasizes the maintenance of existing conditions south of Fish Bay and eliminates further fragmentation of old growth in that area. Alternative 3 proposes timber harvest on 1,889 acres with an output of approximately 38.8 mmbf of sawlog volume. In this alternative, 69 percent of the acres cut (25 mmbf) will be harvested using a helicopter logging system. In addition, 59 percent of the acres will be harvested using a harvest method other than clearcutting.

Wildlife habitat and traditional subsistence use areas south of Fish Bay are not affected by this alternative. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. There will be two LTFs in Rodman Bay and one in Schulze Cove.

Alternative 4

This alternative distributes timber harvest throughout the Project Area. It proposes the highest level of timber harvest of all the alternatives while meeting standards and guidelines for other resources, and addressing current environmental, political, and social issues identified during scoping. It proposes timber sales in seven individual geographic areas within the Project Area (similar to Alternative 1) and creates a mosaic of diverse forest age structures. Alternative 4 proposes timber harvest on 3,262 acres with an output of approximately 66.9 mmbf of sawlog volume. In this alternative, 63 percent of the acres cut (40.6 mmbf) will be harvested using a helicopter logging system. In addition, 59 percent of the acres will be harvested using a harvest method other than clearcutting.

Post-harvest ORV use near Sitka would be enhanced due to road construction and maintenance. This alternative provides the opportunity for better sale scheduling and economic return both locally and nationally. Alternative 4 most nearly meets the direction of the current TLMP for resource production in the Project Area. There will be

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LTFs in Rodman Bay (two locations), Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Passage, and Lisa Creek.

Alternative 5 - No Action

This alternative provides the baseline for measuring effects of all action alternatives. Inclusion of a no-action alternative is required by the NEPA, and may be selected by the Forest Supervisor. No road construction or logging would occur under this alternative.

Summary

Table S-1 Summary of the Action Alternatives									
	Alt. 1			Alt. 2		Alt. 3		Alt. 4	
Sawlog Volume (mmbf)	36.4			51.9		38.8		66.9	
Sawlog & Utility Volume (mmbf)	45.0			64.2		48.0		82.7	
Proposed Harvest Acres	1,739			2,501		1,889		3,262	
Number of Units	96			107		71		153	
Proposed Harvest by Logging System									
	Alt. 1			Alt. 2		Alt. 3		Alt. 4	
Skyline Acres	873	50%		820	33%	583	31%	1,151	35%
Helicopter Acres	866	50%		1,681	67%	1,306	69%	2,111	65%
Skyline Volume (mmbf)	19.9			18.7		13.8		26.3	
Helicopter Volume (mmbf)	16.5			33.2		25.0		40.6	
Proposed Harvest Acres by Harvest Method									
	Alt. 1			Alt. 2		Alt. 3		Alt. 4	
Clearcut w/Reserves	843	49%		991	40%	769	41%	1,354	41%
Seed Tree Cut	346	20%		632	25%	599	32%	803	25%
Overstory Removal	320	18%		570	23%	210	11%	642	20%
Group Selection	230	13%		308	12%	311	16%	463	14%
Proposed Harvest Volume (Sawlog) by Harvest Method (in mmbf)									
	Alt. 1			Alt. 2		Alt. 3		Alt. 4	
Clearcut w/Reserves	20.6			23.6		18.6		32.6	
Seed Tree Cut	7.9			15.2		14.0		18.9	
Overstory Removal	6.6			11.4		4.4		12.8	
Group Selection	1.3			1.7		1.8		2.6	
Proposed Roads and Log Transfer Facilities (LTFs), and Helicopter Insertion Log Transfer Sites (HILTS)									
	Alt. 1			Alt. 2		Alt. 3		Alt. 4	
New Road Miles	19.3			18.5		9.7		23.8	
Reconstruction Miles	11.9			13.1		9.0		16.5	
Temporary Road Miles	10.0			8.2		6.8		14.5	
No. of LTFs	6			4		3		7	
No. of HILTS	1			2		1		3	

Comparison of Alternatives by Issue

Fish Habitat and Water Quality

In response to this issue, all alternatives were designed to protect fish habitat and water quality. Chapter 4 concludes that there will be no measurable effects on fish habitat and related water quality for any alternative. All alternatives meet the requirements of the Clean Water Act. The implementation of the TTRA's requirement to provide a minimum 100-foot buffer on Class I streams and Class II streams flowing directly into Class I streams, will protect streams from proposed timber harvest and road construction.

Streams encountered during road construction are crossed using culverts or bridges. We install bridges where large volumes of water are anticipated. Bridges may be left in place depending on the Road Management Objectives (RMOs) (see Appendix D). Culverts are used to cross small drainages and to provide relief drainage under the road as necessary. Culverts placed in Class I or II streams are designed and installed to allow fish passage.

Both the TTRA and the TLMP require that we use Best Management Practices (BMPs) to minimize the adverse impacts of road construction and timber harvest on soil and water resources. The BMPs are methods, measures, or practices which maintain water quality. BMPs include structural controls, operation and maintenance procedures, and scheduling of activities. They are applied as a system of practices, and are selected on a site-specific basis. BMPs are a part of all stream course protection plans for Class I and II streams. Fish passage requirements for Class I and II stream crossings are also specified in BMPs.

Culverts and bridges will be installed using BMPs; however, each bridge or culvert constitutes a potential risk to fish habitat should the structure fail due to unforeseen natural occurrences. Although such risks are minimal, a comparison of the numbers of Class I and Class II stream crossings helps the decision maker assess the relative risks of each alternative. Table S-2 lists the number of Class I and II stream crossings within each alternative.

Table S-2
Proposed Construction of Roads Across Class I and II Streams by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Class I Stream Crossings	39	42	36	53	0
Class II Stream Crossings	13	15	1	16	0

Source: Lorenz 1995.

Summary

Wildlife Habitat and Populations

In response to this issue we have designed all alternatives to minimize the affect on wildlife as much as possible. In general, wildlife habitats will remain well connected by beach and estuary fringe, stream corridors, and the myriad of muskegs, steep slopes, and areas not scheduled for harvest. Areas of undisturbed old growth are maintained to protect natural ecosystem processes and landscape scale wildlife diversity. Those areas of old growth that are not altered by the activities proposed in the action alternatives will retain their habitat characteristics.

The greatest direct effect to wildlife habitats in all action alternatives will be the loss and fragmentation of old-growth habitat and related changes in forest habitat. Retention of old-growth forest throughout the Project Area in areas such as beach and estuary fringe and in areas left unaffected by proposed activities, is intended to buffer the effect of timber harvesting activities on old-growth dependent wildlife.

Table S-3 displays potential reduction in wildlife habitat capabilities for deer, bear, river otter, brown creeper, bald eagle, marten, and mountain goat within the entire Project Area. This table displays the estimated habitat capability in 1995, and the estimated reduction in this capability if the actions proposed are implemented. Habitat capability does not indicate populations, but is a relative means to estimate and compare effects.

All action alternatives would decrease habitat capabilities by 2 percent or less for deer, 8 percent or less for brown bear, 5 percent or less for marten, and 2 percent or less for mountain goat. Alternative 5 (No Action) would maintain the current capabilities for wildlife.

Table S-3
Potential Reduction in Wildlife Habitat Capability (in Percent) in the Project Area by Alternative

Species	1995 Habitat Capability	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Sitka Black-tailed Deer	4,219	<-1	-2	-1	-2	0
Brown Bear	198	-7	-1	-8	-8	0
River Otter	67	0	0	0	0	0
Marten	258	-4	-3	-3	-5	0
Mountain Goat	64	-2	-2	0	-2	0
Brown Creeper	304	-3	-7	-6	-8	0
Bald Eagle	188	0	0	0	0	0

Source: Hartmann 1995.

Old Growth

In response to this issue we have designed all alternatives to focus activities in areas of prior logging, to avoid large tracts of old growth, and to maintain corridors as much as possible. All action alternatives will reduce the acres remaining in old-growth by less than six percent. Furthermore, large portions of the Project Area are left undisturbed by all alternatives, resulting in the maintenance of the old-growth forests in the watersheds north of St. John Baptist Bay, surrounding Fish Bay, and along Deadman Reach. Finally, many smaller patches of old growth are also left untouched, including the beach and estuary fringes, the stream and riparian area buffers, and areas where the natural fragmentation of the forest has left small patches throughout the Project Area.

For inventory purposes we define old-growth forest in the Geographic Information System (GIS) data base as, "forest habitat over 150 years old with an average diameter at breast height greater than nine inches, and with timber volumes greater than 8,000 board feet per acre." Based on this definition, a total of 51,651 acres of old-growth forest occur in the Project Area at this time. Table S-4 displays remaining old growth for each alternative.

Table S-4
Acres of Old Growth Remaining in the Project Area by Alternative

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Acres Remaining	49,979	49,309	49,892	48,573	51,651
Percent of Current	97%	95%	97%	94%	100%

Source: Hartmann 1995.

Marine Environment

In response to this issue, we have attempted to minimize the effects of LTFs on the marine environment in all alternatives. We have attempted to use previous sites as much as possible. Application of the siting guidelines developed by the Alaska Timber Task Force will minimize the potential effects of LTFs on shellfish populations. The short period of use and relatively small volume of timber that will be handled at the LTFs will minimize bark accumulation. Construction of the proposed LTFs will affect little of the total marine habitat. Short-term and long-term effects on the marine ecosystem will be minimal as a result of LTF use.

Physical access to subsistence fish and shellfish areas will not be significantly changed by any of the action alternatives, however logging camp and LTF operations may conflict with subsistence users. In addition, the presence of logging camp residents may discourage other users in specific areas. An increase in competition for fish and shellfish would not be substantial because of the availability of resources in the immediate vicinity and in surrounding areas.

If an action alternative requires an LTF in St. John Baptist Bay, a barge facility will be used. This will minimize impacts to the bay's juvenile sablefish population. Table S-5 indicates the locations of LTFs for each alternative and the estimated volume of timber

Summary

each LTF would process. Locations of proposed LTFs and Helicopter Insertion Log Transfer Sites (HILTS) are displayed on the alternative maps.

Table S-5

Volume of Timber (mmbf) Handled at Each Log Transfer Facility (LTF) or Helicopter Insertion Log Transfer Site (HILTS) by Alternative

LTF/HILTS	Estimated Sawlog Volume (mmbf)			
	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Appleton Cove		5.7		
NE Rodman	4.3		5.6	7.3
Rodman	8.0	24.8	21.9	24.8
Goose Cove (HILTS)		2.9	2.9	2.9
Schulze Cove	8.2		8.4	8.4
St. John Baptist	7.6	13.1		
St. John Baptist S.				4.4
Nakwasina Passage				8.7
Noxon	2.9			2.9
Nakawsina (HILTS)	2.1			2.1
Lisa Creek		5.4		
Lisa Creek NW	3.3			5.4
Total	36.4	51.9	38.8	66.9

Source: Allio 1995

Subsistence

The Alaska National Interest Lands Conservation Act (ANILCA) requires that the Forest Service determine if proposed activities may significantly restrict use of subsistence resources. If such a finding is made, then ANILCA requires public hearings and determinations regarding actions to minimize impacts prior to proceeding with a project. Chapter 4 contains the ANILCA 810 subsistence analysis. The analysis, including evaluation of public comments and subsistence hearing testimony, concludes that the foreseeable effects from the action alternatives do not indicate a significant possibility of a significant restriction for any subsistence resource other than Sitka black-tailed deer.

The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the action alternatives by themselves do not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the action alternatives on the subsistence use of deer are minimal. However, there is a significant possibility of a significant restriction when the alternatives together with past, present, and reasonably foreseeable future actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) decreases in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

Three major factors are used to assess subsistence impacts: distribution and abundance of subsistence resources, access, and competition with other subsistence users. These three factors are discussed in detail in Chapter 4 of the Final EIS.

Recreation

In response to this issue, we have attempted to locate timber harvest activities away from important recreation areas. Under all alternatives, the Project Area has potential to provide a wide range of recreation opportunities, activities, settings, and experiences. The change in recreation setting because of timber harvest and/or road construction activities may affect the recreational experience and, therefore, overall satisfaction of the forest visitor. Visitors seeking a natural recreational experience may not be satisfied in an area with active timber management activities. On the other hand, visitors who do not require a natural setting for their recreation activities may appreciate the opportunity to use new or existing roads for access to the interior of the Project Area. However, road access will be limited because the area will not be connected to a public road system or the Alaska Marine Highway.

Active timber layout and harvest operations may displace recreationists and outfitter/guides from areas of traditional use. Activities which have a low tolerance for the presence of other humans (such as bear hunting) will be particularly impacted. These effects are expected to decrease significantly after harvest activities cease and logging camps are closed. Table S-6 displays percent change for recreation setting from a natural to a modified condition for each alternative.

Summary

Table S-6

Net Change From Natural to Modified Recreation Setting (in percent of total Project Area)

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
% Change	+4.8%	+4.9%	+3.4%	+7.8%	0%

Source: Flynn 1995

Scenic Quality

In response to this issue, all harvest units, roads, and proposed sale areas were designed to minimize effects on scenic quality. This project contains the largest percentage of overstory removal and group selection harvest methods for any major timber sale on the Tongass National Forest. All activities were designed to avoid visually sensitive beach fringe and individual harvest units were designed to blend into the surrounding forest as much as possible. All alternatives, however, still result in additional visual impacts of varying degrees in the Project Area. These impacts would occur primarily from timber harvest, road construction, and the construction of LTFs. These activities create unnatural lines and textures in the landscape which contrast with the even-texture characteristic of Southeast Alaska old-growth rainforest. These visual impacts, in many cases, will be evident to the average forest visitor. We can measure visual impacts by the resulting acres within each Visual Quality Level, which would occur for each alternative (see Table S-7). Visual Quality Levels are defined in the Glossary in the Final EIS.

Table S-7

Visual Quality Levels (in acres)

Visual Quality Levels	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action*
Retention	3,216	3,208	3,208	3,216	3,216
Partial Retention	47,070	49,258	46,884	40,510	61,046
Modification	75,774	75,441	75,968	81,950	64,030
Maximum Modification	29,670	27,853	29,670	30,084	27,468

Source: Ouderkirk 1995. * Existing VQO.

Economic and Social Quality

All action alternatives will meet the TTRA requirement to provide a supply of timber from the Tongass National Forest which meets the market demand on an annual basis and for each planning cycle. Alternative 4 would supply the largest amount of timber; Alternative 1 the least. Alternative 5, the No Action Alternative, will not meet this requirement.

Projected employment related to this Project varies with the amount of timber harvested. Table S-8 displays the average annual employment (number of jobs) and income (wages) associated with each alternative. The jobs and wages listed include those both directly and indirectly dependent on the timber industry. The volume of timber harvested for each alternative results in a level of jobs and wages associated with that volume. Jobs and wages are based on the Forest Service economic model, IMPLAN.

Table S-8
Projected Average Annual Timber-Related Employment and Income

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Number of Jobs	88	129	96	166	0
Wages (in millions)	\$3.7	\$5.5	\$4.1	\$7.1	0

Source: Morse 1995.

Less definable are the impacts on social dynamics related to each alternative. The No Action Alternative would be the most socially acceptable alternative to those people who need those areas which would be directly impacted by harvest in an unaltered condition. Conversely, the No Action Alternative will not contribute to timber-related employment which may result in the need for families to relocate to areas outside of Southeast Alaska to obtain financial security. The action alternatives provide a range of effects to the social environment which vary from the extremes provided by the No Action Alternative.

Summary

Heritage Resources

The National Historic Preservation Act (NHPA) directs Federal agencies to take into account the effect of proposed actions on historic properties. Historic properties are those properties included in or eligible for inclusion in the National Register of Historic Places. Federal regulations require a "Section 106 review" for proposed actions. In response to this issue, we have completed the NHPA Section 106 review for all timber harvest related activities proposed and displayed in the four action alternatives. This includes units, roads, and LTFs. As a result of this review, we have avoided all known heritage resource sites in the Project Area or otherwise specified stipulations to protect them.

We have not completed Section 106 review for logging camps, helicopter insertion log transfer sites (HILTS), shore-ties, and sort yards. Exact locations of these activities are not yet known, hence we are not yet able to determine their effects under the Section 106 process. Similarly, any activity associated with the planned sales which does not occur within 100 meters of potential roads, units, and LTFs displayed in this EIS will be subject to Section 106 review.

Table S-9
Summary Comparison of Effects of the Alternatives

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5 No Action
Old Growth	78	77	78	76	81
% Remaining					
Wetlands					
% of Wetland Acreage Affected	1.5	0.9	0.7	1.3	0
Wildlife Habitats					
% of Habitat Affected					
Beach Fringe	0.1	0.1	0.1	0.2	0
Estuary Fringe	0.6	0.5	0.2	0.6	0
Riparian	0.8	0.9	0.8	1.1	0
Old Growth	3.2	4.5	3.4	6.0	0
Second Growth	0.6	0.6	0.5	0.8	0
Alpine/Subalpine	0	0	0	0	0
Wildlife Habitat Capability					
% Reduction of Habitat Capability					
Sitka Black-tailed Deer	<-1	-2	-1	-2	0
Brown Bear	-7	-1	-8	-8	0
Marten	-4	-3	-3	-5	0
River Otter	0	0	0	0	0
Mountain Goat	-2	-2	0	-2	0
Brown Creeper	-3	-7	-6	-8	0
Bald Eagle	0	0	0	0	0
Recreation					
% Change in Setting from Natural to Modified	+4.8	+4.9	+3.4	+7.8	0
Visual Quality Level (VQL)*					
% Change in Acres					
Retention	0	-0.2	-0.2	0	0
Partial Retention	-22.9	-19.3	-23.2	-33.6	0
Modification	+18.3	+17.8	+18.6	+28.0	0
Maximum Modification	+8.0	+1.4	+8.0	+9.5	0
Economics					
Number of Jobs	88	129	96	166	0
Wages (\$ millions)	\$3.7	\$5.5	\$4.1	\$7.1	0

* An increase in one VQL is the result of a decrease in a more stringent VQL.



Record of Decision

Northwest Baranof Timber Sales

Final Environmental Impact Statement Record of Decision

USDA Forest Service, Alaska Region
Tongass National Forest, Chatham Area
Sitka Ranger District

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Northwest Baranof Timber Sales

Final Environmental Impact Statement Record of Decision

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Appendix A - Harvest Units Specific to the Selected Alternative

Appendix B - Unit Cards for Two Modified Harvest Units

Appendix C - Silvicultural Diagnoses for Two Modified Harvest Units

Appendix D - Road Management Objectives

Purpose and Need

The purpose and need for the Northwest Baranof Project is (1) to implement direction contained in the Tongass Land Management Plan (TLMP) as amended (USDA Forest Service 1979, 1986, 1991), (2) to help provide a timber supply from the Tongass National Forest consistent with sound multiple use and sustained yield objectives, (3) to help meet market demand for the timber industry in Southeast Alaska, and (4) to help provide employment in the wood products industry throughout Southeast Alaska.

The TLMP assigned Land Use Designation (LUD) IV to approximately 38 percent of the Northwest Baranof Project Area. This designation provides for intensive resource use and development with an emphasis on commodity resources such as timber. The TLMP assigned LUD III to the other 62 percent of the Project Area. LUD III provides for a variety of uses, including timber production. In addition, the TLMP scheduled timber sale preparation for all Management Areas in the Project Area. A comparison of the desired future condition for the Project Area, as reflected in the TLMP direction, with the existing condition shows the need to convert suitable stands of old-growth timber to managed productive stands capable of long-term timber production.

Section 101 of the Tongass Timber Reform Act of 1990 (TTRA) directs that the USDA Forest Service shall "... to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, seek to provide a supply of timber from the Tongass National Forest which (1) meets the annual market demand for timber from such forest and (2) meets the market demand from such forest for each planning cycle." Section 101 of the TTRA specifies that Forest Service efforts to seek to meet market demand are subject to appropriations, National Forest Management Act of 1976 (NFMA) requirements, and other applicable law. Providing a timber supply from the Tongass for sustained local wood products industry employment and related economic and social benefits is an objective of the TLMP, the Alaska National Interest Lands Conservation Act (ANILCA) as amended by the TTRA, and the Ketchikan Pulp Company (KPC) long-term contract.

Two indicators of market demand are used in further defining the need. First, the price of bids for timber in the region remains high. Independent sales continue to sell for more than the appraised value. This reflects the national and world demand for timber. Second, there is a demonstrated mill capacity in the region to process the logs, if the supply of timber is available. Timber volume from this Project Area may help the Forest Service come closer to the objective of providing a three-year supply of timber to the existing dependent industry. This supply is a means of providing for stability in relation to fluctuating market demand (Morse 1995, Brink 1995). A substantial component of the economy of Southeast Alaska is dependent on a viable timber industry. Based on these factors, there is a clear need for the project.



Background

The Project Area was, until recently, part of the Alaska Pulp Corporation (APC) long-term timber sale contract area. On September 30, 1993, APC ceased operation of its Sitka pulp mill, whereupon the Forest Service terminated the long-term timber sale contract with APC on April 14, 1994. Termination of the APC contract shifted the focus for making timber available in the Project Area from long-term timber sale contract offerings to competitive independent timber sales. Since the termination of the contract, the Forest Service has continued to assess market demand for timber in Southeast Alaska as part of its independent timber sale program. This market assessment continues to affirm market demand for timber volume in Southeast Alaska. This indicates that the timber volume from the Northwest Baranof Project Area is needed to contribute to the projected independent sale program.

As a consequence of the termination of the APC long-term contract, timber that was previously committed to APC, is now available for Ketchikan Pulp Company (KPC) under its long-term contract. At this time, the timber volume from the Northwest Baranof Project is scheduled to be made available as independent timber sales. However, timber volume from the Project Area could be made available as one or more KPC long-term contract offerings (See Background section in Chapter 1 of the Final EIS).

Public Involvement

Public involvement has been instrumental in identifying issues, formulating alternatives, and influencing this decision. Public scoping and involvement activities for the Northwest Baranof Project are listed in Appendix J of the Final EIS. A summary of the significant issues used to govern the interdisciplinary analysis is provided later in this document, and the issues are addressed in Chapters 1 and 2 of the Final EIS.

Public scoping, data gathering and analysis, and document production for the Northwest Baranof Project began with publication of the Notice of Intent in the *Federal Register* July 12, 1993. A Revised Notice of Intent was published in the August 31, 1994 *Federal Register*. The Notice of Availability for the Draft EIS was published in the *Federal Register* August 18, 1995, and the public comment period for the Draft EIS closed October 16, 1995. The Final EIS discloses the environmental effects of the alternatives considered and this Record of Decision documents the decision for authorization of activities within the Project Area.



Decision

This record documents my decision to make timber available from the Northwest Baranof Project Area in accordance with TLMP. My decision includes the following:

- the volume of timber to make available through independent timber sales;
- the location of harvest units, roads, and log transfer facilities (LTFs);
- mitigation measures and enhancement opportunities for sound resource management; and
- whether there may be a significant restriction on subsistence uses.

It is my decision to select Alternative 2 with modifications, as described below, for implementation in the Northwest Baranof Project Area. This decision meets the purpose and need for the project; is consistent with sound management of the National Forests; and is responsive to the issues raised during scoping, public responses to the Draft EIS, and testimony received at the subsistence hearings.

Table 1
Summary of Harvest Methods

	Number of Units	Acres	% of Total Acres	Volume (mmbf) (Sawlog)	% of Total Volume (Sawlog)
Clearcut with Reserves	55	1,049	38%	25.8	48%
Seed Tree Cut	29	674	25%	15.8	29%
Overstory Removal	23	452	17%	9.1	17%
Group Selection	10	549	20%	3.2	6%
Total	117	2,724	100%	53.9	100%

Selected Alternative

The Selected Alternative for the Northwest Baranof Project is described in this section of the ROD and is displayed on the accompanying Record of Decision map. Specifically, my decision authorizes the following:

1. Timber will be harvested in this entry on approximately 2,285 acres of commercial forest land. I expect implementation to occur in five independent timber sales. The final decision on the number of sales will be made later during final timber sale preparation. This specified timber harvest will result in approximately 53.9 million board feet of sawlog volume and 12.8 million board feet of utility volume for a total of 66.7 million board feet. There will be 117 timber harvest units located in the five proposed sale areas. The Selected Alternative includes a mixture of harvest methods to achieve silviculture and other resource objectives. Table 1 displays a summary of the harvest methods applied in the Selected Alternative.

Table 2 displays the specifications and expected outputs for each of the proposed sale areas and for the Selected Alternative as a whole. ROD Appendix A lists each unit, by proposed sale area, approved for harvest under the Selected Alternative. The timber harvest units are described in detail on the unit cards in Appendix N of the Final EIS and ROD Appendix B, and in the Silvicultural Diagnoses in Appendix P of the Final EIS and in ROD Appendix C.

2. The modification of Alternative 2 by removing the following 12 harvest units from the peninsula south of St. John Baptist Bay (VCUs 300 and 302) as they were displayed in Alternative 2 in the Final EIS:

Units: 6271, 6272, 6293, 6294, 6341, 6342, 6343, 6344, 6345, 6361, 6364, and 6371.

3. The addition of the following 20 harvest units in the Schulze Cove proposed sale area (VCUs 287 and 288) as they were displayed in Alternative 3 in the Final EIS:

Units: 4031, 4041, 4061, 4081, 4082, 4083, 4084, 4091, 4092, 4093, 4094, 4095, 5001, 5002, 5003, 5004, 5005, 5011, 5012, and 5013.

4. The addition of the following two harvest units in the Rod 'n Apple proposed sale area (VCU 292) as they were displayed in Alternative 4 in the Final EIS:

Units: 3304 and 3313.

5. The change of harvest method for two harvest units (1145 and 3012) in the Rodman Bay proposed sale area from seed tree cut and clear-cut with reserves to group selection. With group selection, approximately 20 percent of the stand will be harvested each entry.

6. The construction of 17.4 miles of new system road, the reconstruction of 16.0 miles of existing road, and the construction of 10.3 miles of temporary road in order to access the specified timber harvest units. The road corridors for the Selected Alternative are planned as they were displayed in Alternative 2 in the Final EIS, with the following exceptions.

Lisa Creek: There is the option of constructing a new road 75581 and a new LTF site as displayed in Alternative 1, if the appropriate rights-of-way and permits can not be acquired for the existing road and LTF.

St. Johns: The removal of 12 harvest units from this proposed sale area as described above will result in the use of the road corridors as displayed in Alternative 1 with three modifications. These modifications are: remove road 75831S; remove road 758313; and terminate road 75831 in unit 6281.

Schulze Cove: The addition of the 20 harvest units in this proposed sale area as described above will result in the use of the road corridors as displayed in Alternative 3.

Table 2
Summary of Selected Alternative

	Proposed Sale Areas					
	Lisa Creek	St Johns	Schulze Cove	Rodman Bay	Rod 'n Apple	Total
Unit Summary						
Sawlog Volume (mmbf)	5.4	8.7	8.4	24.2	7.2	53.9
Sawlog plus Utility Volume (mmbf)	6.6	10.7	10.4	30.0	9.0	66.7
Harvest Unit Acres	232	402	378	1422	290	2724
Number of Units	11	28	20	49	9	117
Average Unit Size (acres)	21.1	14.4	18.9	29.0	32.2	23.3
Actual Harvest Acres *	232	402	351	1010	290	2285
Harvest by Logging System						
Skyline Acres	64	267	249	113	290	983
Helicopter Acres	168	135	129	1309	0	1741
Skyline Volume (sawlog in mmbf)	1.5	5.8	5.5	2.7	7.2	22.7
Helicopter Volume (sawlog in mmbf)	3.9	2.9	2.9	21.5	0	31.2
Acres by Harvest Method						
Clearcut with Reserves	170	233	208	302	136	1049
Seed Tree Cut	0	0	119	401	154	674
Overstory Removal	62	169	17	204	0	452
Group Selection	0	0	34	515	0	549
Actual Group Selection *	0	0	7	103	0	110
Volume by Harvest Method (Sawlog in mmbf)						
Clearcut with Reserves	4.0	5.6	5.2	7.5	3.5	25.8
Seed Tree Cut	0.0	0.0	2.6	9.5	3.7	15.8
Overstory Removal	1.4	3.1	0.4	4.2	0.0	9.1
Group Selection	0.0	0.0	0.2	3.0	0.0	3.2
Road Construction (miles)						
New Road Construction	1.0	7.0	5.1	2.1	2.2	17.4
Road Reconstruction	2.3	1.9	0.0	9.0	2.8	16.0
Temporary Roads	0.4	2.3	4.8	1.0	1.8	10.3

* Note: Actual Harvest Acres and Actual Group Selection (acres) both reflect the fact that only 20 percent of the acres within the harvest unit will actually be harvested during the first entry.

Appendix N of the Final EIS contains the road cards with specific direction for the location, design, and construction of each road. ROD Appendix D lists the roads and their respective road management objectives for future management of the transportation system. Road management objectives are subject to periodic review and may be changed in response to changing conditions and management needs.

7. The construction of Log Transfer Facilities (LTFs) at four previously used sites (Lisa Creek, St. John Baptist Bay, Rodman Bay, and Appleton Cove) as they were displayed in Alternative 2, and one LTF at a new site (Schulze Cove) as displayed in Alternative 3. The LTFs at Appleton Cove and St. John Baptist Bay will be barge facilities. The other three LTFs will utilize a low-angle ramp or slide. As mentioned above, there is the option of constructing a new road 75581 and a new LTF site at Lisa Creek, as they were displayed in Alternative 1, if the appropriate rights-of-way and permits can not be acquired for the existing road and LTF. Furthermore, the Selected Alternative includes two Helicopter Insertion Log Transfer Sites (HILTS) where logs will be lowered directly into the water by helicopter. These sites are in Goose Cove near Deadman Reach and in Rodman Bay. Associated with all transfer facilities will be logging camps, boat docks, fuel storage, sort yards, rafting areas, and other support facilities. Some of the facilities may be floating, some may be upland. Furthermore, some logging operations may use other facilities outside the Project Area, such as the logging camps at False Island or in Poison Cove. Final plans for logging camps and other support facilities will be completed after the timber is sold. These plans will be subject to the appropriate laws, regulations, and reviews.

8. This Record of Decision identifies mitigation measures to reduce or eliminate adverse environmental effects of timber harvest and road construction activities specified in the Selected Alternative. It also specifies the implementation and effectiveness monitoring planned to determine how well resource management objectives have been met. In addition, the Record of Decision identifies enhancement opportunities that are feasible following implementation of this alternative. These opportunities will be included in Sale Area Improvement Plan(s) developed in conjunction with each sale. The specific mitigation measures, monitoring activities, and enhancement opportunities are the same as those applicable to all action alternatives, and are displayed in Appendix A of the Final EIS.

9. Finally, I have determined that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the Selected Alternative by itself does not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the Selected Alternative on the subsistence use of deer are minimal. However, there is a significant possibility of a significant restriction when the Selected Alternative together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. As a result, I have determined that: (a) these actions are necessary, consistent with sound management of public lands; (b) the Selected Alternative involves the minimum amount of public land necessary to accomplish its purpose; and (c) reasonable measures to minimize impacts on subsistence uses and resources have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

Reasons for Decision

In making my decision, I worked to ensure consideration of all issues and took into account the competing interests and values of the public. A beneficial mix of resources and uses for the public continues to be available with the Selected Alternative within the framework of the existing laws, regulations, policies, public needs and desires, and capabilities of the land, while meeting the stated purpose and need for this project.

My decision to implement this Selected Alternative is consistent with the Tongass Land Management Plan (TLMP) as amended, and sound National Forest management. I have considered the need to help maintain an adequate timber supply that meets the market demand for timber and provides employment in Southeast Alaska in support of community stability. I have also considered the need to provide strong protection measures for fish, wildlife, and other resources important to subsistence, recreation, commercial, and other uses.

I removed 12 harvest units on the peninsula south of St. John Baptist Bay from Alternative 2 because of visual and subsistence concerns. Although six of these units were planned for group selection or overstory removal to mitigate visual, wildlife, and subsistence concerns, I believe that additional protection is appropriate. The removal of these units results in a buffer approximately one mile wide between timber harvest activities and Neva Strait. This buffer reflects the importance of the scenic, wildlife, and subsistence values along Neva Strait.

I included 22 harvest units, in the Schulze Cove and Rod 'n Apple proposed sale areas in the Selected Alternative in order to offset the timber volume lost by deletions of units from Alternative 2. Furthermore, the addition of these units in the northern part of the Project Area allows me to minimize timber activities in the southern part of the Project Area while meeting the stated purpose and need for the project. It also allows me the opportunity to defer timber harvest at this time in the Nakwasina River and Noxon Creek areas. These areas south of Fish Bay have high value to the residents of Sitka for hunting, fishing, subsistence, recreation, and scenic quality.

The application of harvest methods other than clearcutting is relatively new in Southeast Alaska. The ecosystem management strategy for the Forest Service in Alaska requires us to test the applicability of harvest methods other than clearcutting on selected timber projects. Three alternatives to clearcutting that were considered for the Northwest Baranof Project were group selection, overstory removal, and seed tree cut. Although these harvest methods are relatively new for Southeast Alaska, they were applied wherever practicable. Within the Project Area we applied, where possible, harvest methods which mimic natural disturbance patterns while meeting the other resource and management objectives.

Overstory removal maintains 40 - 80 percent of the existing trees in the stand. Important old-growth attributes (significant number of large trees, snags, and large down woody material) can be retained. Reserve trees may be regularly spaced or grouped to meet treatment objectives.

Group selection is an uneven-aged management technique. Groups of trees ranging from 0.5 to 2 acres in size are removed across the unit. These groups create gaps in the stand canopy which facilitate natural regeneration. Systematic harvest entries, referred to as

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"cutting cycles," are made at regular intervals, such as every 40-50 years. Each cutting cycle will remove approximately 20% of the trees in the stand. Thus, five cutting cycles will be needed to harvest the entire original stand. Removal of the original stand would occur over approximately 160-200 years, depending on the time interval chosen (40 or 50 years). This would result in a variety of age classes and size classes present across the unit through time.

Seed tree cuts are proposed in the Project Area to encourage regeneration of yellow cedar and to retain the diversity of tree species in the stand. Yellow cedar seed trees could be left standing in small groups or scattered uniformly across the harvest unit (approximately 6 - 12 trees per acre). The distribution of cedar suitable for seed trees, topography, and type of yarding equipment will dictate the arrangement of trees to be left.

The harvest units for which group selection, overstory removal, and seed tree cut are prescribed were identified and designed to achieve the success of the prescription. However, two units in the Rodman Bay proposed sale area (1145 and 3012) that had been designed for other harvest methods (clearcut with reserves and seed tree cut) were also important for scenic and wildlife values. As a result, I have changed the harvest method for both units to group selection. The specific logging plan for each harvest unit is described on the unit cards and an Integrated Silvicultural Prescription will be prepared prior to implementation. Sale administrators will ensure that the logging operations accomplish the harvest objectives for these units. Implementation of prescriptions for alternative harvest methods is intended to add to our knowledge of these alternate treatments for Southeast Alaska timber types.



How Issues Are Addressed

In the following section is a summary of the significant issues within the scope of the project and a description of how the Selected Alternative addresses each of the significant issues.

Fish Habitat and Water Quality

The fish habitat and water quality of the streams on the Tongass National Forest contribute to the economic, recreational, and subsistence needs of Southeast Alaska residents. Stream habitat provides important shelter, hiding places, food, and rearing areas for salmon. Changes in stream habitat due to logging or road construction could alter a stream's ability to produce fish.

In response to this issue, all alternatives including the Selected Alternative were designed to protect fish habitat and water quality. Chapters 2 and 4 of the Final EIS conclude that there will be no measurable effects on fish habitat and related water quality for any alternative, including the Selected Alternative. All alternatives meet the requirements of the Clean Water Act. The implementation of the TTRA's requirement to provide a minimum 100-foot buffer on Class I streams and Class II streams flowing directly into Class I streams, will protect streams from proposed timber harvest and road construction.

We use bridges and culverts where roads cross streams. Bridges are installed where large volumes of water are anticipated. Bridges may be left in place depending on the Road Management Objectives (RMOs) (see ROD Appendix D). Culverts are used to cross small drainages and to provide relief drainage under the road as necessary. Culverts placed in Class I or II streams are designed and installed to allow fish passage.

Both the TTRA and the TLMP require that we use Best Management Practices (BMPs) to minimize the adverse impacts of road construction and timber harvest on soil and water resources. The BMPs are methods, measures, or practices which maintain water quality. They include structural controls, operation and maintenance procedures, and scheduling of activities. They are applied as a system of practices, and are selected on a site-specific basis. BMPs are a part of all stream course protection plans for Class I and II streams. Fish passage requirements for Class I and II stream crossings are also specified in BMPs.

Wildlife Habitat and Populations

The Project Area supports a wide variety of wildlife species. A stable, huntable population of Sitka black-tailed deer is important for many Sitka residents. The maintenance of adequate deer winter range is critical for deer survival. Logging may reduce available winter habitat for deer and may contribute to reduced deer populations in some areas over the long term.

In response to this issue we designed all alternatives to minimize the affect on wildlife whenever possible. In the Selected Alternative, the Project Area will remain a diverse and largely natural environment. In general, wildlife habitats will remain well connected by beach and estuary fringe, stream corridors and the myriad of muskegs, steep slopes, and areas not scheduled for harvest. Areas of undisturbed old growth are maintained to protect natural ecosystem processes and landscape scale wildlife diversity. Those areas of

old growth that are not impacted by the activities proposed in the Selected Alternative will retain their habitat characteristics.

The greatest direct effect to wildlife habitats will be the loss and fragmentation of old-growth habitat. Retention of old-growth forest throughout the Project Area in areas such as beach and estuary fringe and in areas left unaffected by this decision, is intended to buffer the effect of timber harvesting activities on old-growth dependent wildlife. In the Selected Alternative, the total acreage of old-growth habitat in the Project Area will be reduced by approximately 6 percent.

Table 2-3 in the Final EIS displays potential reduction in wildlife habitat capabilities for deer, bear, marten, and mountain goat within the entire Project Area. This table displays the estimated habitat capability in 1995, and the estimated reduction in this capability if the actions proposed are implemented. Habitat capability does not indicate current or future populations, but is a relative means to estimate and compare effects.

All action alternatives including the Selected Alternative would decrease habitat capabilities by 2 percent or less for deer, 8 percent or less for brown bear, 5 percent or less for marten, and 2 percent or less for mountain goat. Alternative 5 (No Action) would maintain the current habitat capabilities for wildlife. The Selected Alternative does not include any road construction south of Fish Bay that would increase access to the goat herd located in the vicinity of Annahootz Mountain.

Old Growth

Old-growth forests are valuable because of their biological diversity, wildlife habitat, recreation opportunities, scenic quality, soil productivity, and water quality. These forests are also a source of high-quality timber. Balancing these important but conflicting values of old-growth forests is an important and difficult management problem. In addition, fragmentation of isolated old-growth forest tracts caused by natural conditions and logging activities, the size of old-growth patches, and corridors that connect old-growth patches, are important factors in managing wildlife habitats and for biological diversity.

In response to this issue we have designed all alternatives to focus activities in areas of prior logging, to avoid large tracts of old-growth forest, and to maintain corridors as much as possible. All action alternatives, including the Selected Alternative, will reduce the acres remaining in old-growth forests by less than 6 percent. Large portions of the Project Area are left undisturbed by this decision, resulting in the maintenance of the old-growth forests in the watersheds north of Nakwasina Passage, north of St. John Baptist Bay, surrounding Fish Bay, and along Deadman Reach. In addition, many smaller patches of old-growth forest are also left untouched by this decision including the beach and estuary fringes, the one mile buffer along Neva Strait, the stream and riparian area buffers, and areas where the natural fragmentation of the forest has left small patches throughout the Project Area.

Marine Environment

Marine fish and shellfish productivity may be affected by the location and design of log transfer facilities (LTFs) and log storage areas, and by bark accumulations that may occur as a result of their use. A specific concern is the possible adverse effects of the proposed LTF in St. John Baptist Bay on the juvenile sable fish population that lives there. In addition, the proposed LTFs in Nakwasina Passage and Sound may adversely affect crabbing in those areas.

In response to this issue, we have attempted to minimize the effects of LTFs on the marine environment in all alternatives. Previous LTF sites have been used as much as possible. The effects of timber harvest and road construction on shellfish populations will be minimal for the Selected Alternative. Application of the siting guidelines developed by the Alaska Timber Task Force will minimize the potential effects of LTFs on shellfish populations. The short period of use and relatively small volume of timber that will be handled at each of the LTFs will reduce potential for bark accumulation. Construction and use of the proposed LTFs will have little short-term or long-term effect on the marine ecosystem.

Physical access to subsistence fish and shellfish areas will not be significantly changed, however logging camp and LTF operations may conflict with subsistence users. In addition, the presence of logging camp residents may discourage other users in specific areas. Any increase in competition for fish and shellfish will not be substantial because of the availability of these resources in the immediate vicinity and in surrounding areas.

The Selected Alternative requires an LTF in St. John Baptist Bay. A barge facility will be used which will minimize impacts to the bay's juvenile sable fish population. Use of the existing barge facility at Appleton Cove is also required by this decision. Construction of drive-down type LTF facilities with a "no-splash" operation is planned at Lisa Creek, Schulze Cove, and Rodman Bay. Table 2-5 in the Final EIS indicates the locations of LTFs for each alternative and the estimated volume of timber each LTF would process. Locations of proposed LTFs and Helicopter Insertion Log Transfer Sites (HILTS) for the Selected Alternative are displayed on the Record of Decision map.

Log transfer facility development is contingent upon approval of permits obtained from those agencies identified at the end of Chapter 1 of the Final EIS. Should the permitting process result in significant changes to either the location or design of one or more of the log transfer facilities, such changes would be evaluated in an interdisciplinary manner according to NEPA and the results of the analysis documented. If such changes are significant, then my decision would be supplemented prior to development of the log transfer facility.

Subsistence

Maintaining subsistence opportunities on Baranof Island is of concern to many rural residents. This area is used for hunting, trapping, fishing, gathering, and other customary and traditional use. Subsistence supplements the diets of many people and is the primary source of food for some. For Native Americans in Southeast Alaska, subsistence resources are important for the preservation of cultural customs and traditions. The subsistence lifestyle involves deeply-held values, attitudes, and beliefs of both Native and non-Native people.

The Alaska National Interest Lands Conservation Act (ANILCA) requires that the Forest Service determine if proposed activities may significantly restrict use of subsistence resources. If such a finding is made, then ANILCA requires public hearings and determinations regarding actions to minimize impacts prior to proceeding with a project. Chapter 4 of the Final EIS contains the ANILCA 810 subsistence analysis. The analysis, including evaluation of public comments and subsistence hearing testimony, concludes that the potential foreseeable effects from the action alternatives including the Selected

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Alternative do not indicate a significant possibility of a significant restriction for any subsistence resource other than Sitka black-tailed deer.

The analysis also concludes that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the Selected Alternative, by itself, does not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the Selected Alternative on the subsistence use of deer are minimal. However, there is a significant possibility of a significant restriction when the Selected Alternative together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

Three major factors are used to assess subsistence impacts: distribution and abundance of subsistence resources, access, and competition with other subsistence users. These three factors are discussed in detail in Chapter 4 of the Final EIS.

The community of Sitka averaged approximately 38 percent of its subsistence harvest of deer from the four ADF&G Wildlife Analysis Areas (WAAs) that include the Project Area during 1987 to 1991. These four WAAs also include significant areas outside the Project Area such as Partofshikof Island, Halleck Island, and Krestof Island. Displacement of subsistence use as a result of project activities could be to areas within the Project Area unaffected by this decision, to other areas within the four WAAs, or to areas outside the four WAAs where the other 62 percent of Sitka's subsistence harvest of deer occurs. Any displacement that may occur would likely be temporary until activities within the Project Area conclude in 3 to 5 years.

The Selected Alternative reflects my efforts to minimize effects on subsistence resources used by the community of Sitka. The Selected Alternative minimizes timber harvest in the southern half of the Project Area by including only two proposed sale areas south of Fish Bay (St. Johns and Lisa Creek). Both of these sales areas limit the extent of timber harvests within one mile of the beach, in part to protect subsistence resources. Also, no timber harvest is planned for the high value subsistence areas around Nakwasina River and Noxon Creek, nor at the head of Fish Bay. Road Management Objectives for roads south of Fish Bay would eliminate vehicle access after logging is completed except at St. John Baptist Bay, where existing use would continue.



Recreation

Outdoor recreation opportunities are important to the quality of life for many Southeast Alaska residents. Dense rain forests, abundant fish and wildlife, and miles of protected waterway combined with the vast and remote character of the area provide a unique setting for quality recreation experiences. Furthermore, the lack of roads and the necessity for access from saltwater provide a unique recreational setting appreciated by visitors and residents alike. Difficult terrain, dense vegetation, and limited anchorages confine many recreational activities to accessible shorelines.

In response to this issue, we have attempted to locate timber harvest activities away from important recreation areas. Under all alternatives, including the Selected Alternative, the Project Area has potential to provide a wide range of recreation opportunities, activities, settings, and experiences. The change in recreation setting because of timber harvest and/or road construction activities may affect the recreational experience and, therefore, overall satisfaction of the forest visitor. Visitors seeking a recreational experience in a natural setting may not be satisfied in an area with active timber management activities. On the other hand, visitors who do not require a natural setting for their recreation activities may appreciate the opportunity to use new or existing roads for access to the interior of the Project Area.

Active timber layout and harvest operations may displace recreationists and outfitter/guides from areas of traditional use. Those who have a low tolerance for the presence of other humans (such as bear hunters) will be particularly impacted. These effects are expected to decrease significantly after harvest activities cease and logging camps are closed.

The Selected Alternative limits timber harvest activities within the primary recreation areas for the community of Sitka south of Fish Bay. Only two proposed sale areas (St. Johns and Lisa Creek) are located in this area. Both are geographically small in size and extent, and are located to avoid the primary recreation areas along the beach.

Scenic Quality

Travelers along the route of the Alaska Marine Highway view dense spruce and hemlock rain forests, abundant fish and wildlife, rugged mountains, secluded fjords and bays, and miles of protected waterways. The unique natural setting and outstanding scenery are an important component of the visitors' experience. Tourism is an important sector in Sitka's diverse economy, and maintaining the scenic quality of the landscape is of concern to both visitors and the community. Many people have chosen to live in or visit Sitka because of the opportunity to work or play in an area with outstanding scenic quality.

In response to this issue, all harvest units, roads, and proposed sale areas were designed to minimize effects on scenic quality to the extent practicable. This project contains a large percentage of overstory removal and group selection harvest methods. All activities were designed to avoid visually sensitive beach fringe and individual harvest units were designed to blend into the surrounding forest as much as possible. All alternatives, however, still have additional visual impacts of varying degrees in the Project Area, even though the effects were minimized. These impacts are the result of timber harvest, road construction, and the construction of LTFs.

These activities create unnatural lines and textures in the landscape which contrast with the natural characteristics of Southeast Alaska old-growth rainforest. These visual impacts, in some cases, will be evident to the average forest visitor. The Selected Alternative was developed as a result of my desire to mitigate or eliminate the visual impacts of timber harvest activities on the scenic quality of the landscape south of Fish Bay. Most of the timber harvest has been focused north of Fish Bay, and the harvest south of Fish Bay has been located to avoid adversely affecting scenic quality.

Economic and Social Quality

The lifestyles, values, and quality of life for the residents of Southeast Alaska are highly dependent on the surrounding National Forest. The forests of the Project Area provide a valuable setting for recreation, hunting, fishing, and subsistence use. They also are an economic resource for Southeast Alaska and the community of Sitka. They are valuable as a setting for commercial recreation and tourism, and the streams provide spawning habitat for salmon which support a large commercial fishing industry. The forests also provide valuable timber that may be used to support a wood products industry.

In response to this issue the Selected Alternative provides harvest of approximately 53.9 million board feet of saw timber volume. Additionally, it includes 43.7 miles of system and temporary road construction or reconstruction, and the construction or reconstruction of four LTFs. Specified harvest of this level supports an average of 130 jobs per year for the duration of the project. These jobs are directly or indirectly related to timber harvest, road construction, and wood product processing.

None of the alternatives are projected to have a significant effect on income or employment opportunities in the sport or commercial fishing industries or those related economic sectors. Timber harvest activities may displace outfitter/guide use from portions of the Project Area until after completion of harvest activities. Recreational settings will shift from a natural to a more modified setting in areas affected by timber harvest activities. Because of the availability of other areas that could provide similar commercial opportunities, and because the Selected Alternative affects only some of the inventoried Recreation Places in the Project Area, I expect no significant impact on employment and income opportunities in the recreation and tourism industry.

Heritage Resources



The Project Area lies largely within an area traditionally claimed by the Sitka Tlingit. Because of the importance of this area in preserving the Tlingit culture and traditional values, the Forest Service has worked closely with the Sitka Tribe of Alaska to identify areas of cultural importance. Once identified, the Forest Service can protect these sites by avoiding them when planning and implementing management activities.

The National Historic Preservation Act (NHPA) directs Federal agencies to take into account the effect of proposed actions on historic properties. Historic properties are those properties included in or eligible for inclusion in the National Register of Historic Places. Federal regulations require a "Section 106 review" for proposed actions. In response to this issue, we have completed the NHPA Section 106 review for all timber harvest related activities proposed by the four action alternatives and the Selected Alternative. This includes units, roads, and LTFs. As a result of this review we have avoided all known heritage resource sites in the Project Area or otherwise specified stipulations to protect them.

We have not completed Section 106 review for logging camps, helicopter insertion log transfer sites (HILTS), shore-ties, and sort yards. Exact locations of these activities are not yet known, hence we are not yet able to determine their effects under the Section 106 process. Similarly, any activity associated with the planned sales which does not occur within 100 meters of potential roads, units, and LTFs displayed in this EIS will be subject to Section 106 review.

Coordination with Other Agencies

From the time scoping was initiated, meetings and other contacts have occurred with interested Federal and State agencies, and with Tribal governments. Issues were discussed and information was exchanged. Appendix J of the Final EIS lists public involvement activities and meetings. A list of the agencies who were informed of, and/or involved in the planning process follows Chapter 4 of the Final EIS.

Alternatives

Alternatives Considered in Detail

We considered five alternatives (four action alternatives and a no-action alternative) in detail. Each alternative was developed to respond differently to the issues, and to provide a range of choices. We have included maps (distributed with the Final EIS) which illustrate the proposed roads and harvest units for each of the five alternatives.

For each action alternative, we have prepared a theme or intent for the alternative. Table 3 summarizes the volume and acres of timber harvest, logging systems, harvest methods, and roads proposed for the four action alternatives and the Selected Alternative. Also see the alternative maps for greater detail.

Alternative 1

This alternative represents the “proposed action” as presented during public scoping (see discussion in Chapter 2 of the Final EIS). It has been modified since public scoping to reflect harvest units dropped from further consideration because of resource concerns. This alternative distributes timber harvest throughout the Project Area. It proposes timber sales in seven individual geographic areas within the Project Area: two locations in Rodman Bay, Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Sound, and Lisa Creek. There would be an LTF for each of the seven individual geographic areas, with the exception of Nakwasina Sound. At this location, logs would be placed directly in the water by helicopter. Alternative 1 proposes timber harvest on 1,739 acres with an output of approximately 36.4 mmbf of sawlog volume. In this alternative, 50 percent of the acres cut (16.5 mmbf) would be harvested using a helicopter logging system. In addition, 51 percent of the acres would be harvested using a harvest method other than clearcutting.

Alternative 1 maintains wildlife habitat and subsistence resources along the north shores of Nakwasina Passage and St. John Baptist Bay, and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. Opportunity for increased motorized vehicle, bicycle, and foot access would be provided on the road system south of St. John Baptist Bay.

Alternative 2

This alternative concentrates timber harvest in three areas that have had previous logging activity: Rodman Bay, St. John Baptist Bay, and Lisa Creek. It also minimizes further fragmentation of old growth as a result of additional timber harvest, especially in and adjacent to the Fish Bay and Nakwasina River watersheds. This alternative maintains the existing conditions in approximately 70 percent of the Project Area by deferring timber harvest in areas which have had only limited harvest in the past. Alternative 2 provides

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timber harvest on 2,501 acres with an output of approximately 51.9 mmbf of sawlog volume. In this alternative, 67 percent of the acres cut (33.2 mmbf) would be harvested using a helicopter logging system. In addition, 60 percent of the acres would be harvested using a harvest method other than clearcutting.

Alternative 2 maintains wildlife habitat and traditional subsistence use areas at the head of Nakwasina Sound, along the north shores of Nakwasina Passage and St. John Baptist Bay and throughout the Fish Bay drainage. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Deadman Reach to St. John Baptist Bay. Logging economics would be improved by using reconstructed roads in this alternative. LTFs would be located in Appleton Cove, Rodman Bay, St. John Baptist Bay, and Lisa Creek.

Alternative 3

This alternative concentrates timber harvest in the north end of the Project Area with logging at Schulze Cove and Rodman Bay. It also defers timber harvest in those portions of the Project Area closest to Sitka. This alternative emphasizes the maintenance of existing conditions south of Fish Bay and eliminates further fragmentation of old growth in that area. Alternative 3 proposes timber harvest on 1,889 acres with an output of approximately 38.8 mmbf of sawlog volume. In this alternative, 69 percent of the acres cut (25 mmbf) would be harvested using a helicopter logging system. In addition, 59 percent of the acres would be harvested using a harvest method other than clearcutting.

Wildlife habitat and traditional subsistence use areas south of Fish Bay would not be affected by this alternative. The current scenic quality on Baranof Island along the Alaska Marine Highway route would be maintained from Fish Bay to Sitka. There would be two LTFs in Rodman Bay and one in Schulze Cove.

Alternative 4

This alternative distributes timber harvest throughout the Project Area. It proposes the highest level of timber harvest of all the alternatives while meeting standards and guidelines for other resources, and addressing current environmental, political, and social issues identified during scoping. It proposes timber sales in seven individual geographic areas within the Project Area (similar to Alternative 1) and creates a mosaic of diverse forest age structures. Alternative 4 proposes timber harvest on 3,262 acres with an output of approximately 66.9 mmbf of sawlog volume. In this alternative, 63 percent of the acres cut (40.6 mmbf) would be harvested using a helicopter logging system. In addition, 59 percent of the acres would be harvested using a harvest method other than clearcutting.

Post-harvest ORV use near Sitka would be enhanced due to road construction and maintenance. This alternative provides the opportunity for better sale scheduling and economic return both locally and nationally. Alternative 4 most nearly meets the direction of the current Tongass Land Management Plan for resource production in the Project Area. There would be LTFs in Rodman Bay (two locations), Schulze Cove, St. John Baptist Bay, Noxon Creek, Nakwasina Passage, and Lisa Creek.

Alternative 5 - No Action

This alternative provides the baseline for measuring effects of all action alternatives. Inclusion of a no-action alternative is required by the NEPA, and may be selected by the Forest Supervisor. No road construction or logging would occur under this alternative.

Table 3
Summary of the Action Alternatives

	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Selected Alt.		
Sawlog Volume (mmbf)	36.4		51.9		38.8		66.9		53.9		
Sawlog & Utility Volume (mmbf)	45.0		64.2		48.0		82.7		66.7		
Harvest Unit Acres	1,739		2,501		1,889		3,262		2,724		
Number of Units	96		107		71		153		117		
Proposed Harvest by Logging System											
	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Selected Alt.		
Skyline Acres	873	50%	820	33%	583	31%	1,151	35%	983	36%	
Helicopter Acres	866	50%	1,681	67%	1,306	69%	2,111	65%	1,741	64%	
Skyline Volume (mmbf)	19.9		18.7		13.8		26.3		22.7		
Helicopter Volume (mmbf)	16.5		33.2		25.0		40.6		31.2		
Proposed Harvest Acres by Harvest Method											
	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Selected Alt.		
Clear-cut w/Reserves	843	49%	991	40%	769	41%	1,354	41%	1,049	38%	
Seed Tree Cut	346	20%	632	25%	599	32%	803	25%	674	25%	
Overstory Removal	320	18%	570	23%	210	11%	642	20%	452	17%	
Group Selection	230	13%	308	12%	311	16%	463	14%	549	20%	
Proposed Harvest Volume (Sawlog) by Harvest Method (in mmbf)											
	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Selected Alt.		
Clear-cut w/Reserves	20.6		23.6		18.6		32.6		25.8		
Seed Tree Cut	7.9		15.2		14.0		18.9		15.8		
Overstory Removal	6.6		11.4		4.4		12.8		9.1		
Group Selection	1.3		1.7		1.8		2.6		3.2		
Proposed Roads and Log Transfer Facilities (LTFs), and Helicopter Insertion Log Transfer Sites (HILTS)											
	Alt. 1		Alt. 2		Alt. 3		Alt. 4		Selected Alt.		
New Road Miles	19.3		18.5		9.7		23.8		17.4		
Reconstruction Miles	11.9		13.1		9.0		16.5		16.0		
Temporary Road Miles	10.0		8.2		6.8		14.5		10.3		
No. of LTFs	6		4		3		7		4		
No. of HILTS	1		2		1		3		2		

Alternatives Eliminated from Detailed Study

Three alternatives were considered during the early stages of the alternative development process that were subsequently eliminated from detailed study. These alternatives are described below:

Road to Rodman Bay -The original proposed action for the Northwest Baranof Project included construction of approximately 80 miles of road, which would have been interconnected between Nakwasina Passage and Rodman Bay. In addition to providing transportation for timber, the road would have provided portions of a road system extending from Sitka to Rodman Bay. Consideration of this interconnected route was dropped after initial analysis due to a number of factors including the shift to smaller independent timber sales, the high cost of the many road connections, and the lack of public support for an interconnected route. In addition, no harvest is planned in the Fish Bay Creek watershed in any alternative considered in detail, further reducing the need for an interconnected road system.

Harvest in Fish Bay and along Deadman Reach - The Alaska Region released a draft Environmental Assessment that proposed interim guidelines for maintaining viable wildlife populations. One component of this proposal was to establish a network of Habitat Conservation Areas (HCAs) across the Tongass. Two of the mapped areas lie within the Northwest Baranof Project Area. As a result, I have decided to defer consideration of timber harvest in the Fish Bay drainage and along Deadman Reach as a part of this project to allow more time for consideration of the HCA option. Therefore, no alternative was considered in detail that included harvest in these two areas.

VCUs 310, 312, and 313 - These VCUs at the south end of the Project Area (nearest to Sitka) were dropped from consideration after initial field reviews. These field reviews determined that the suitable timber within the three VCUs was not economically accessible, nor found in sufficient quantity to justify harvest at this time.

Environmentally Preferred Alternative

There is no single factor that can be used to determine which alternative is environmentally preferred. Maintaining the basic productivity of the land and the quality of lifestyle of the local residents are vitally important.

Based on the comparison of the alternatives shown in Table 2 and as displayed in Chapters 2 and 4 of the Final EIS, Alternative 5, the "No Action" alternative, would cause the least environmental disturbance. Among the action alternatives, Alternative 3 is the environmentally preferred alternative. This alternative has the second lowest level of acres proposed for harvest, has the fewest miles of road construction and associated stream crossings, avoids important subsistence use areas close to Sitka, and maintains the current scenic quality south of Fish Bay.

The Selected Alternative is more environmentally preferred than Alternatives 1, 2, and 4 because of modifications incorporated in response to comments on the Draft EIS which mitigate potentially adverse environmental effects. Only two sale areas are planned south of Fish Bay and those two areas are located and designed to minimize impacts on subsistence and scenic resources. Only one new LTF site is planned. Furthermore, specific harvest units have been dropped and two units have been changed to group selection to provide additional protection to wildlife, subsistence, and scenic resources. The Selected Alternative was chosen over Alternative 3 because it provides additional timber volume

in areas previously harvested, and provides opportunity for small timber sales close to Sitka.

Mitigation

Applicable standards and guidelines of the Tongass Land Management Plan of 1979 (as amended), the Alaska Regional Guide, and applicable Forest Service Manuals and Handbooks will minimize or negate many potentially adverse environmental effects from timber harvest and road construction. We protect water quality and fisheries habitat through the application of Best Management Practices (BMPs) stated in the Soil and Water Conservation Handbook (FSH 2509.22) and the direction contained in the Aquatic Habitat Management Handbook (FSH 2609.24). In addition, the Tongass Timber Reform Act (TTRA) requires a minimum 100-foot buffer for all Class I streams and Class II streams directly flowing into Class I streams. The buffers and other stream protection measures adopted in this decision equal or exceed Tongass Timber Reform Act requirements.

Measures were applied in the development of the project alternatives, including the Selected Alternative, and in the location of the harvest units and road corridors to avoid, reduce, minimize or eliminate the adverse affects of timber harvest related actions. The Mitigation Measures section of Chapter 2 and Appendix A of the Final EIS discuss those measures common to all action alternatives including the Selected Alternative. Mitigation measures adopted include all practicable means to avoid or minimize the environmental harm from the proposed actions (40 CFR 1505.2(b)). The Final EIS includes Unit Cards (Appendix N) and Road Cards (Appendix O) which incorporate site-specific mitigation. A more detailed description of the Selected Alternative mitigation is included below. Appendix A of the Final EIS gives specific mitigation measures applicable to the Selected Alternative.

Mitigation measures and BMPs designed to protect water quality and fisheries habitat will likewise reduce impacts on forest soils. Soils with an extreme mass-wasting hazard have been avoided in the design of harvest units. Partial or full suspension of logs during yarding will be required in areas of units with high hazard soils. Trees will be felled away from v-notches and split yarding of v-notches will be required. Throughout the planning process, a number of units and parts of units have been dropped in order to reduce impacts on forest soils. Past experience indicates these measures are effective. In all harvest units, there will be reserve areas in which 5 - 80 percent of the existing volume will not be harvested. In areas where wind may cause blowdown, timber harvesting will be done in such a way that the edge of remaining timber stands are feathered, reducing the risk of blowdown and resulting impacts on soils, particularly in adjacent stands. Group selection, overstory removal, and feathering have not been widely used in Southeast Alaska, but the location of the harvest units, both topographically and in relation to adjacent stands, the harvest method and logging system, and the recommendations in the unit cards should minimize the adverse effects on soils.

Ten units in the Project Area have been identified for uneven-aged management by the group selection harvest method. In this method, approximately 20% of each unit would be harvested in 0.5 to 2.0 acre groups. The primary reasons for proposing group selection rather than clearcutting were to reduce the visual impact as viewed from boats outside the Project Area and to reduce the loss of old-growth wildlife habitat and travel corridors. Harvest will be by helicopter, reducing associated impacts of road building on visual and

other resources. Openings will be located and shaped so as to minimize their visibility. These units will be managed on a 160- to 200-year rotation. The extended rotations are consistent with the direction in the 1985-86 Amendment to TLMP for Visual Management Class I in LUD III and IV. Further measures to decrease impacts to the visual and recreation resources include dropping highly visible units, and feathering the boundaries of some of the other visible units. See unit cards in Final EIS (Appendix N) and ROD Appendix B for a more detailed description.

To avoid adverse effects on wildlife habitat values, units were located outside of the beach and estuary fringe habitats, thereby reducing the potential to adversely impact high value habitats. Maintaining travel corridors for wildlife and retention of snags in harvest units (where safe to do so) are measures individually identified on the road or unit cards in the Final EIS Appendix N and ROD Appendix B which minimize adverse effects to wildlife. In addition, approximately 30 miles of road are to be closed following the completion of sale activities. Drainage structures may be removed, if necessary, for long-term resource protection. Erosion control measures (waterbars, grass seeding) will also be performed. Avoiding timber harvest at this time in the watersheds of Nakwasina River, Noxon Creek, Fish Bay, and Deadman Reach will retain the acres of old-growth habitat and consequently buffer effects on wildlife habitat.

Monitoring

Monitoring is the process by which the Forest Service evaluates if a project has been implemented as specified, if environmental mitigation measures were effective, and if resource management assumptions are valid. Three types of monitoring are recognized. The first two, implementation monitoring and effectiveness monitoring, are feasible at the project level. The third, validation monitoring, is conducted at the Forest wide level.

Applicable monitoring requirements for all action alternatives including the Selected Alternative are specified in Appendix A of the Final EIS. For each monitoring item, we identified an objective, desired result, method of measurement, threshold and corrective action, along with the responsible staff. Monitoring activities may reveal results that deviate from planned effects, in which case corrective actions are prescribed (40 CFR 1505.2(c)).

The Sitka District Ranger is responsible for ensuring that project implementation, mitigation, monitoring and enforcement are accomplished as specified.

Enhancement Opportunities

The Knutson-Vandenberg Act (1930), as amended by the NFMA of 1976, allows the Forest Service to collect receipts from timber sales for Sale Area Improvement (SAI) projects. Top priority for these funds is to ensure stand regeneration. The Sitka District Ranger will prioritize subsequent projects, such as precommercial thinning, fisheries enhancement, and soil stabilization, and list them on the SAI plan. If funding for resource enhancement projects is not available from K-V receipts, these projects could be added to the regular program budget. The Sitka Ranger District will develop the SAI plan during final timber sale preparation. Specific enhancement opportunities identified for the Selected Alternative are listed in Appendix A of the Final EIS.

Findings Required by Law

National Forest Management Act

The National Forest Management Act (NFMA) requires specific determinations in this Record of Decision including consistency with the existing Forest Plan and Regional Guide. It also requires a determination of clearcutting as the optimal method of harvesting and specific authorization of clearcuts over 100 acres.

Tongass Land Management Plan and Alaska Regional Guide. This decision is consistent with the Alaska Regional Guide and the Tongass Land Management Plan of 1979, as amended. I have reviewed the management direction and the schedule of activities for the VCUs included in the Selected Alternative, and find the Selected Alternative to be consistent with these elements. The areas of undisturbed old-growth wildlife habitat maintained in this alternative exceed the standards for retention established in TLMP.

Although not required, the activities authorized in this decision are consistent to the extent practicable with the proposed standards and guidelines and management prescriptions of the proposed Forest Plan Revision.

Clearcutting as the Optimal Method of Harvesting. The Alaska Regional Guide established management direction and standards for western hemlock - Sitka spruce forest type (Alaska Regional Guide, page 3-18). The Guide states that even-aged management in the form of clearcutting will be used only where this practice is determined to be optimum to meet the objectives and requirements of the Forest Plan, where there is a high risk of dwarf mistletoe reinfection, and where risk of windthrow is determined to be high. Dwarf mistletoe is somewhat of a problem in specific areas within the Northwest Baranof Project Area. All of the harvest units being proposed for clearcut with reserves as a harvest method in the Selected Alternative have either a high level of mistletoe infection or a high risk of windthrow. Clearcutting of the proposed harvest units will help meet the objective of maintaining fast-growing, mistletoe-free stands of mixed species and is the optimum method of harvesting, considering the following factors referenced in the Alaska Regional Guide:

- Hemlock dwarf mistletoe, *Arcanthobium tsugense*, an important parasite of western hemlock can best be controlled by clearcutting. Elimination of residual overstory trees infected with dwarf mistletoe prevents infection of western hemlock in the new stand.
- Risk of blowdown in residual stands is eliminated. The chance of blowdown along cutting boundaries is increased but can be reduced through proper design of cutting units.

In addition to the direction in the Alaska Regional Guide, the Chief of the Forest Service established new provisions in June 1992 for the reduction of clearcutting on National Forest System Lands. They stated that clearcutting is to be limited to areas that involve one of seven specific circumstances. The clearcuts prescribed in the Northwest Baranof Project Area meet the following circumstance as specified in that direction:

"To preclude or minimize the occurrence of potentially adverse impacts or insect or disease infestations, windthrow, logging damage, or other factors affecting forest health."

Clearcuts Over 100 Acres in Size. In the Selected Alternative there are two combinations of units that, when harvested, will produce openings greater than 100 acres. Units 3301, 3302, 3303, and 3304 together make up 121 acres that are proposed for a seed tree harvest. Units 3311, 3312, 3313, and 3314 total 123 acres, all of which would be clearcut with reserves, except the 33 acres in unit 3314. Unit 3314 is proposed as a seed tree cut. For purposes of opening size, seed tree and clearcut with reserves harvest methods are treated as clearcuts. These two additional openings would be created due to transportation and harvest system requirements; relative cost of preparation, logging, and administration of harvest. These units were clearly displayed for comment during the 59-day review of the Draft EIS. This 59-day public comment period meets the requirements of the Alaska Regional Guide for approval of units over 100 acres. Based on public review and the reasons listed for the openings greater than 100 acres above, these units are authorized for harvest as designed.

Tongass Timber Reform Act

Harvest units were designed and will be located to maintain a minimum 100-foot buffer zone for all Class I streams and Class II streams that flow directly into Class I streams as required in Section 103 of the TTRA. The actual widths of these buffer strips will often be greater than the 100-foot minimum. The design and implementation direction for the Selected Alternative incorporates BMPs for protection of all stream classes.

As directed by Section 301 of the TTRA, the Northwest Baranof Project was planned, management requirements were applied, and environmental analysis procedures were followed consistent with procedures for independent National Forest timber sales. Section 301(c)(2) of the TTRA modified the Alaska Pulp Corporation (APC) and Ketchikan Pulp Company contracts to require proportional harvest of Volume Classes 6 and 7 timber. The statute does not impose proportional harvest as a requirement on independent sales. The termination of the APC long-term contract eliminates proportional harvest as an applicable statutory requirement for the Selected Alternative given that Northwest Baranof will be implemented through independent timber sale contracts.

However, analysis of proportional harvest of Volume Classes 6 and 7 was performed using the procedures in Forest Service Sale Preparation Handbook 2409.18, Region 10 Supplement No. 2409.18-93-3 for the Selected Alternative. It was determined that upon completion of the Selected Alternative's harvest, proportionality consistent with FSH 2409.18 direction for Management Areas C40 and C41 will result. Tables 4 through 6 display the current land base distribution of volume classes and the proportionality projections for the Selected Alternative based on USFS handbook direction. Forest Service methodology used to implement section 301(c)(2) has been challenged in court, in *Wildlife Society et al. v. Barton*, J93-001 CIV (D. Alaska). An alternative methodology is being evaluated but is not available at this time.

Table 4
ROD Harvest Acres by Volume Class by VCU

Management Area	VCU	Volume Class 4	Volume Class 5	Volume Class 6	Volume Class 7	Total VC 4&5 C40	Total VC 6&7 C40	Total VC 4&5 C41	Total VC 6&7 C41
C40	287	26	46	0	0	72	0		
C40	288	240	63	0	0	303	0		
C40	289	86	0	0	0	86	0		
C41	291	104	326	3	0			430	3
C41	292/293	537	652	5	0			1189	5
C40	299	0	0	0	0	0	0		
C40	300	131	0	0	0	131	0		
C40	301	131	102	0	0	233	0		
C40	302	216	56	0	0	272	0		
Total		1,471	1,245	8	0	1,097	0	1,619	8

Table 5
Proportionality C40

	Total Timber Base	Volume Class 4 & 5	Volume Class 6 & 7	Proportional Percent
Base	52,331	51,867	464	0.89
ROD Harvest	1,097	1,097	0	
Proportion	51,234	50,770	464	0.91

Table 6
Proportionality C41

	Total Timber Base	Volume Class 4 & 5	Volume Class 6 & 7	Proportional Percent
Base	27,653	26,945	708	2.56
ROD Harvest	1,627	1,619	8	
Proportion	26,026	25,326	700	2.69

Endangered Species Act

The Selected Alternative will not have a direct, indirect, or cumulative effect on any threatened, or endangered species in the Northwest Baranof Project Area. A biological assessment and evaluation are included in Appendix B of the Final EIS. I have determined that this action will not have any adverse impacts on any threatened or endangered species.

Bald Eagle Protection Act

Management activities inconsistent with current bald eagle use within 330 feet of an eagle nest tree are restricted by an Interagency Agreement between the Forest Service and the U. S. Fish and Wildlife Service to facilitate compliance with the Bald Eagle Protection Act. Four variances from the Interagency Agreement must be obtained for implementation of the Selected Alternative for reconstruction of roads within 330 feet of known eagle nest trees. A variance must also be issued for conducting helicopter operations within 1/4 mile of eagle nests.

Clean Water Act

The location of harvest units and roads for the Selected Alternative was guided by standards, guidelines, and direction contained in the current TLMP, the proposed TLMP Revision, the Alaska Regional Guide, and applicable Forest Service manuals and handbooks. The unit cards and road cards (Appendices N and O in the Final EIS and ROD Appendix B) contain specific details on practices prescribed to prevent or reduce non-point sediment sources. Implementation with site specific application and monitoring of approved BMPs will comply with applicable State Water Quality Standards Regulations. These regulations provide for variances from antidegradation requirements and water quality criteria. The harvest and road building operators will be responsible for compliance, including obtaining any variance required by the State, and will be monitored for compliance by the Forest Service. The Forest Service expects the Northwest Baranof Project activities to fully qualify for any variance required by the State, according to the criteria in 18 AAC 70.015.

A monitoring plan to detect and evaluate possible effects of bark accumulations, oil sheens, and surface runoff will be implemented as a part of the permitting process for log transfer facilities (BMP 14.4, FSH 2509.22).

National Historic Preservation Act

Heritage resource surveys have been completed in the Project Area. We have consulted the Sitka Tribe of Alaska and the State Historic Preservation Officer, and have complied with the provisions of 36 CFR part 800. The State Historic Preservation Officer has concurred with our finding that proposed units, roads, and LTFs displayed in the four action alternatives, with some specific stipulations, have no effect on cultural resources. Based on surveys conducted by professional archaeologists in the Project Area, I have determined there will be no significant effects on cultural resources. We have completed the Section 106 review for all timber harvest related activities displayed in the Final Environmental Impact Statement. This includes roads, units, and LTFs in all alternatives. The Forest Service timber sale contract contains enforceable measures for protecting any undiscovered cultural resource that might be encountered during sale operations.

Federal Cave Resource Protection Act of 1988

The actions in the Selected Alternative will not have a direct, indirect, or cumulative effect on any significant cave in the Northwest Baranof Project Area. No cave resources have been documented in the Project Area and no caves were discovered during field work done for this analysis (Final EIS, Chapter 3).

ANILCA Section 810 Subsistence Evaluation and Findings

A subsistence evaluation was conducted for the five alternatives considered in detail in accordance with ANILCA Section 810. Two open house meetings followed by ANILCA Section 810 hearings were held in Sitka on September 11 and September 27, 1995. During the hearings, subsistence concerns were expressed by people giving testimony.

The evaluation of comments from the public, subsistence hearing testimony, and additional analysis, indicates that the potential foreseeable effects from the action alternatives in the Northwest Baranof Project Area do not indicate a significant possibility of a significant restriction of subsistence uses for brown bear, furbearers, marine mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots.

The analysis does conclude that there is a significant possibility of a significant restriction on subsistence use of Sitka black-tailed deer in the Project Area for the community of Sitka. Implementation of the Selected Alternative by itself does not present a significant possibility of a significant restriction to subsistence use of deer. The effects of the Selected Alternative on the subsistence use of deer are minimal, with a reduction in deer habitat capability in the future of less than 2 percent. However, there is a significant possibility of a significant restriction when the Selected Alternative together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction exists regardless of which alternative is implemented, including the No Action Alternative. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

Subsistence Determinations

Section 810 of ANILCA requires that when a use, occupancy, or disposition of public lands would significantly restrict subsistence uses, determinations must be made that (1) the significant restriction of subsistence uses is necessary, consistent with sound management of public lands, (2) the proposed activity involves the minimum amount of public lands necessary, and (3) reasonable steps will be taken to minimize adverse impacts on subsistence uses and subsistence resources resulting from the action.

Necessary, Consistent with Sound Management of Public Land

The Selected Alternative has been examined to determine whether the associated potential restriction to subsistence use is necessary, consistent with the sound management of public lands. Standards used for the review included (1) the Multiple Use Sustained Yield Act of 1960; (2) the National Forest Management Act (NFMA) of 1976 and its implementing regulations; (3) the Alaska National Interest Lands Conservation Act (ANILCA) of 1980; (4) the Alaska Regional Guide (1983); (5) the Tongass Land

Management Plan of 1979 (as amended) and the draft revision; (6) the Tongass Timber Reform Act (TTRA) of 1990; (7) the Alaska State Forest Practices Act; (8) the Alaska Coastal Zone Management Program; (9) Subsistence Management and Use Handbook (1985); and (10) Subsistence Evaluation and Finding (FSH 2609.25).

ANILCA placed an emphasis on the maintenance of subsistence resources and lifestyles. However, the Act also provided for adequate opportunity for satisfaction of the economic and social needs of the State of Alaska and its people, and recognized public lands necessary and appropriate for more intensive uses. The Act also required the Forest Service to make available for harvest 4.5 billion board feet of timber per decade from the Tongass National Forest. The TTRA removed the 4.5 billion board foot requirement from ANILCA, but directed the Forest Service to seek to meet market demand for timber to the extent consistent with providing for the multiple use and sustained yield of all renewable forest resources, and subject to applicable law.

The Selected Alternative is necessary as a component of the timber management program designed to implement the Forest Plan and to meet TTRA direction. There is currently a very strong market demand for timber, a limited timber supply from other sources, and an underutilized mill capacity in the region. The Selected Alternative provides the most volume to contribute to the Forest Service's actions to seek to meet market demand while providing for other resources and uses. Current timber market analysis indicates that the timber demand exceeds the timber supply. The timber volume provided by the Selected Alternative will best help to bridge that gap. This volume is provided as a component of the ten year timber sale schedule which attempts to provide timber to industry in an even flow over the planning cycle. The timber volume is also a substantial component of the timber sale program to be offered in the next five years on the Chatham Area to meet annual market demand. Timber volume from other areas of the Tongass National Forest is not available to replace this volume in a reasonable time frame.

Of the action alternatives, the Selected Alternative best meets the objectives of the Forest Plan and TTRA direction for timber harvests while also providing protection measures for forest resources. It is consistent with the Forest Plan, laws, regulations, policies, public needs, and the capabilities of the land.

Based on a review of the subsistence hearing testimony and the analysis conducted in the Final EIS, it is apparent that all of the action alternatives involve some potential impact to subsistence deer use in the future. There is no alternative that would meet TLMP objectives and yet avoid a significant possibility of a subsistence restriction somewhere in the National Forest. Therefore, based on the analysis of the information presented in the Final EIS and this ROD, it is my determination that the Selected Alternative is necessary, consistent with sound management of public lands and strikes the best balance between meeting the needs of the public and protecting forest resources.

Amount of Land Necessary to Accomplish the Purpose of the Proposed Action

The amount of public land involved to implement the Selected Alternative is (considering sound multiple-use management of public lands) the minimum necessary. The Northwest Baranof Project Area was selected to become part of the timber sale schedule because it is designated as a multiple use area that permits timber harvest in the Forest Plan. The TLMP assigned a land use designation (LUD) of IV to approximately 38 percent of the Northwest Baranof Project Area. This designation provides for intensive resource use and development with an emphasis on commodity resources such as timber. The TLMP assigned LUD III to the other 62 percent of the Project Area. LUD III provides for a

variety of uses, including timber production. In addition, the TLMP scheduled timber sale preparation for all Management Areas in the Project Area.

The Project Area is located in an area that has been harvested many times since the arrival of the Russians over 200 years ago. The Selected Alternative has 5 proposed sale areas, four of which are located in areas logged in the past 30 years. These four also utilize the existing LTF sites. The Selected Alternative also provides a sound location and design for all harvest units and roads. The minimum amount of land and roading was used to resolve resource concerns while meeting the purpose and need for the project in a practical and efficient manner. The Selected Alternative harvests less than 6 percent of the inventoried old-growth forest within the Project Area and less than 2.4 percent of the commercial forest land. Resources were protected to the maximum extent practicable.

Choosing an alternative other than the Selected Alternative (including the No Action Alternative) or locating the harvest in another location on the Chatham Area would not avoid or substantially lessen the risk to subsistence use in the future. The total deer habitat capability projected into the future is only expected to be reduced by less than 2 percent by harvest from the Selected Alternative when compared to the No Action Alternative. The risk to subsistence use in the future is primarily a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (3) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer. These effects are independent of the Northwest Baranof Project.

The entire Tongass National Forest is used by one or more rural communities for subsistence purposes for deer hunting (TRUCS, Forest Service 1990b). The areas of most subsistence use are the areas adjacent to existing road systems, beaches, and the areas in close proximity to the communities. Much effort was taken to protect the highest value subsistence areas. For example, beach fringe is one of the most highly used subsistence areas and there is no timber harvest planned in the beach fringe by the Selected Alternative.

Management activities can not completely avoid these subsistence areas due to their location and broad extent across the Forest. Areas other than subsistence use areas that could be harvested may be limited by other resource concerns such as soil and water protection, high-value wildlife habitat, economics, scenic quality, or unit and road design. The impact of viable timber harvest projects always includes the alteration of old-growth habitat which reduces habitat capability for old-growth dependent species.

It is not possible to lessen harvest in one area and concentrate it in another without impacting one or more rural communities' important subsistence use areas. In addition, harvestable populations of game species could not be maintained in a natural distribution across the Forest if harvest was concentrated in specific areas. A well-distributed population of species is also required by the Forest Service regulations implementing the NFMA.

Therefore; it is my determination that the Selected Alternative involves the minimum amount of public land necessary and strikes the best balance between meeting the needs of the public and protecting the forest resources.

Reasonable Steps to Minimize Adverse Impacts Upon Subsistence Uses and Resources

Considerable steps were taken to minimize the impacts to subsistence use and resources. The Selected Alternative reflects special efforts by the Forest Service to minimize the effects on resources used for subsistence by those rural communities that would be most likely to receive the highest priority in the event of an ANILCA section 804 "Tier II" restriction. Considerable effort was taken during the Northwest Baranof analysis to protect the highest value subsistence areas for deer. Most areas of high value and historic subsistence use were avoided in the Selected Alternative. No units were placed within the beach fringe or stream buffers which are the areas of traditional use. The affect of the Selected Alternative on subsistence use of deer by the community of Sitka is minimal. The Selected Alternative projects a reduction in deer habitat capability in the future of less than 2 percent.

Another significant subsistence resource in the Project Area is salmon. Fish habitat is protected in the Selected Alternative through the application of the BMPs and stream buffers. In addition to protecting fish habitat these buffers also protect estuarine and riparian habitat important to other species such as deer, bear, and furbearers.

The Selected Alternative reflects a reasonable balance between projected need for Tongass timber from the Project Area to help meet TLMP, ANILCA, and TTRA timber-related employment objectives, and continued protection of subsistence uses and resources. Impacts on subsistence have been minimized through the development of the individual harvest units and road corridors, and through the formulation of the alternatives.

The Final EIS and this ROD describe the mitigation measures that will be implemented as a part of the Selected Alternative. Most of the mitigation measures are designed to maintain fish and wildlife habitat productivity at the highest level possible, while still maintaining a supply of timber.

A significant possibility of a significant restriction on the subsistence use of Sitka black-tailed deer in the Project Area is expected when the Selected Alternative together with other past, present, and reasonably foreseeable actions are considered in a cumulative manner. This restriction would be a result of (1) a decrease in habitat capability that could decrease the abundance or distribution of deer, (2) high deer mortality during severe winters that occur periodically, (3) average yearly deer harvest levels exceeding what appears to be sustainable harvest levels, and (4) anticipated human population growth with its associated increase in subsistence hunter demand when compared to the habitat capability to produce deer.

It is my determination that reasonable measures to minimize impacts on subsistence have been adopted to the maximum extent practicable while still meeting the purpose and need for this project.

Executive Orders 11988 and 11990

Executive Order 11988 directs Federal agencies to take action to avoid, to the extent possible, the long and short-term adverse impacts associated with the occupancy and modification of floodplains. The numerous streams in the Northwest Baranof Project Area makes it impossible to avoid all floodplains during timber harvest and road construction. The design of the Selected Alternative and the application of Best Management Practices combine to minimize adverse impacts on floodplains.

Executive Order 11990 requires Federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the destruction or modification of wetlands. The Selected Alternative avoids most identified wetlands, however many small wetlands or muskegs occur as inclusions within forested areas. These areas may be altered by timber harvest or road construction, however techniques and practices required by the Forest Service serve to maintain the wetland attributes. It is estimated there will be no net loss of wetlands with any of the alternatives. Soil moisture regimes and vegetation on some wetlands may be altered in some cases; however, these altered acres would still be classified as wetlands and function as wetlands in the ecosystem.

Coastal Zone Management Act

The Coastal Zone Management Act of 1976 (as amended) excludes Federal lands from the coastal zone. However, the act requires that when Federal agencies conduct activity or undertake development affecting the coastal zone, they be consistent to the maximum extent practicable with enforceable policies of the approved Alaska Coastal Management Program.

The Alaska Coastal Management Plan incorporated the Alaska Forest Resources and Practices Act of 1979 (as revised) as the applied standards and guidelines for timber harvesting and processing. The Forest Service standards and guidelines, BMPs, and mitigation measures described in Appendix A of the Final EIS are fully consistent with the State Standards.

Based on the analysis in the Final EIS, review of the Alaska Forest Practices Act, and comments from the City of Sitka and State agencies on the Draft EIS, the action and activities are consistent to the maximum extent practicable with the enforceable policies of the Alaska Coastal Management Plan.

Federal and State Permits

Federal and State permits necessary to implement the authorized activities are listed at the end of Chapter 1 of the Final EIS.



Implementation

Implementation of the decisions made by the Chatham Area Forest Supervisor, which are subject to appeal pursuant to 36 CFR Part 215, may occur on, but not before, 5 business days from the close of the appeal filing period. The appeal filing period closes 45 days after publication of legal notice of this decision in the *Daily Sitka Sentinel* newspaper, published in Sitka, Alaska.

This project will be implemented in two or more timber sales in accordance with Forest Service Manual and Handbook direction for Timber Sale Project Implementation in FSM 2432.3 Gate 3 and FSH 2409.18 Sale Prep. This direction provides a bridge between project planning and implementation, and will ensure execution of the actions, environmental standards, and mitigation approved by this decision, and compliance with TTRA and other laws.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS, ROD, and planned unit and road cards, unless they are modified consistent with direction in FSM 2432.3 and FSH 2409.18.

Final EIS and ROD Appendices contain the planned unit and road cards. These cards are an integral part of this decision because they document the specific resource concerns, management objectives, and mitigation measures to govern the layout of the harvest units and construction of roads. These cards will be used during the implementation process to ensure that all aspects of the project are implemented within applicable standards and guidelines and that resource impacts will not be greater than those described in the EIS. Similar cards will be used to document any changes to the planned layout as the actual layout and harvest of the units occurs with project implementation. The implementation record for this project will display each harvest unit, transportation facility, and other project components as actually implemented, any proposed changes to the design, location, standards, and guidelines, or other mitigation measures for the project, and the decisions on the proposed changes.

Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act of 1976 (NFMA), Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), the Tongass Timber Reform Act (TTRA), the Coastal Zone Management Act (CZMA), and other laws concerning such changes.

In determining whether and what kind of NEPA action is required, I will consider the criteria for whether to supplement an existing EIS in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular, whether the proposed change is a substantial change to the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

The intent of field verification that occurs during planning is to confirm inventory data and to determine the feasibility and general design and location of a unit or road, not to locate the final boundaries or road locations. Minor changes are expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout for the purpose

of improving logging system efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Many of these minor changes will not present sufficient potential impacts to require any specific documentation or action to comply with applicable laws. Some minor changes may still require appropriate analysis and documentation to comply with FSH 1909.15, sec. 18.

Right to Appeal

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. A written notice of appeal must be filed with the Appeal Deciding Officer:

Phil Janik
Regional Forester
USDA Forest Service, Region 10
P.O. Box 021628
Juneau, AK 99802-1628

The Notice of Appeal must be filed within 45 days of publication of notice of this decision in the *Daily Sitka Sentinel*.

In accordance with 36 CFR Section 215.14, it is the responsibility of those who appeal a decision to provide the Appeal Deciding Officer sufficient evidence and rationale to show why the Responsible Official's decision should be remanded or reversed. The written notice of appeal filed must meet the following requirements:

1. State that the document is a Notice of Appeal filed pursuant to 36 CFR Part 215;
2. List the name, address, and telephone number of appellant;
3. Identify the decision document by title and subject, date of the decision, and name and title of the Responsible Official;
4. Identify the specific change(s) in the decision that the appellant seeks or portion of the decision to which the appellant objects;
5. State how the Responsible Official's decision fails to consider comments previously provided, either before or during the comment period specified in 36 CFR 215.6 and, if applicable, how the appellant believes the decision violates law, regulation or policy and, if applicable, specifically how the decision violates the law, regulation, or policy.

The first timber sale is planned to be made available as part of the current timber supply prior to September 30, 1996. Implementation of this action can begin 5 business days after the close of the 45 day appeal filing period. An appeal of this decision would evoke a stay of implementation of the Selected Alternative until fifteen days after the appeal decision.

Record of Decision

Contact Person

For additional information concerning the specific activities authorized with this decision contact the Northwest Baranof Planning team:

James M. Thomas
Northwest Baranof Planning Team
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204 Siginaka Way
Sitka, Alaska 99835

(907) 747-6671



GARY A. MORRISON
Forest Supervisor

Date

2/5/96

Appendix A

Harvest Units Specific to the Selected Alternative

ROD Selected Alternative

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
Rodman Bay					
1061	60	Helicopter	Group Selection	20	347
1065	8	Helicopter	Seed Tree	85	203
1071	24	Helicopter	Seed Tree	85	593
1072	14	Helicopter	Overstory Removal	80	286
1131	18	Helicopter	Seed Tree	85	417
1144	11	Helicopter	Overstory Removal	80	229
1145	83	Helicopter	Group Selection	20	489
1146	15	Helicopter	Clearcut w/ Reserves	95	399
1147	17	Helicopter	Group Selection	20	99
1171	30	Helicopter	Seed Tree	85	729
1172	48	Helicopter	Seed Tree	85	1185
1173	17	Helicopter	Seed Tree	85	372
1211	6	Helicopter	Seed Tree	85	144
1221	32	Helicopter	Seed Tree	85	795
1231	26	Helicopter	Overstory Removal	70	530
1251	33	Helicopter	Clearcut w/ Reserves	95	930
1252	43	Helicopter	Seed Tree	85	1090
1271	21	Helicopter	Overstory Removal	80	479
1275	41	Helicopter	Group Selection	20	234
2042	19	Helicopter	Clearcut w/ Reserves	95	455
2043	68	Helicopter	Clearcut w/ Reserves	95	1630
3002	24	Helicopter	Clearcut w/ Reserves	95	654
3011	48	Helicopter	Group Selection	20	260
3012	138	Helicopter	Group Selection	20	780
3014	36	Helicopter	Clearcut w/ Reserves	95	867
3015	94	Helicopter	Group Selection	20	545
3033	9	Helicopter	Seed Tree	85	193
3041	25	Helicopter	Seed Tree	85	560
3043	10	Helicopter	Seed Tree	85	214
3051	17	Live Skyline/Helicopter	Seed Tree	85	365
3052	6	Helicopter	Clearcut w/ Reserves	95	144
3053	15	Live Skyline	Clearcut w/ Reserves	95	360
3054	47	Live Skyline	Clearcut w/ Reserves	95	1127
3055	22	Live Skyline	Clearcut w/ Reserves	95	527
3061	14	Helicopter	Group Selection	20	71
3062	8	Live Skyline	Seed Tree	85	172
3063	7	Live Skyline	Clearcut w/ Reserves	95	168
3111	12	Helicopter	Seed Tree	85	257
3112	6	Helicopter	Seed Tree	85	129
3132	20	Helicopter	Group Selection	20	117
3141	32	Helicopter	Seed Tree	85	803
3142	54	Helicopter	Overstory Removal	70	1121
3143	28	Helicopter	Overstory Removal	70	556
3151	46	Helicopter	Seed Tree	85	1061
3201	17	Helicopter	Overstory Removal	80	370

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
3223	8	Helicopter	Overstory Removal	90	211
3224	10	Helicopter	Clearcut w/ Reserves	95	240
3281	25	Helicopter	Overstory Removal	70	442
3291	10	Helicopter	Seed Tree	85	253
Subtotal (in MMBF)					24.2
Rod 'n Apple					
3301	39	Live Skyline	Seed Tree	85	984
3302	20	Live Skyline	Seed Tree	85	507
3303	30	Live Skyline	Seed Tree	85	679
3304	32	Live Skyline	Seed Tree	85	741
3305	46	Live Skyline	Clearcut w/ Reserves	95	1168
3311	26	Live Skyline	Clearcut w/ Reserves	95	710
3312	34	Live Skyline	Clearcut w/ Reserves	95	863
3313	30	Live Skyline	Clearcut w/ Reserves	95	806
3314	33	Live Skyline	Seed Tree	85	809
Subtotal (in MMBF)					7.3
Schulze Cove					
4031	32	Helicopter	Seed Tree	85	686
4041	48	Helicopter	Seed Tree	85	1045
4061	25	Helicopter	Seed Tree	85	536
4081	13	Running Skyline	Clearcut w/ Reserves	90	295
4082	69	Live Skyline	Clearcut w/ Reserves	95	1728
4083	28	Live Skyline	Clearcut w/ Reserves	95	758
4084	20	Helicopter	Clearcut w/ Reserves	95	519
4091	8	Live Skyline	Clearcut w/ Reserves	95	192
4092	17	Live Skyline/Helicopter	Clearcut w/ Reserves	95	408
4093	5	Live Skyline	Clearcut w/ Reserves	95	120
4094	5	Live Skyline	Seed Tree	85	107
4095	3	Live Skyline	Overstory Removal	90	68
5001	7	Live Skyline	Clearcut w/ Reserves	95	168
5002	7	Live Skyline	Clearcut w/ Reserves	95	168
5003	14	Live Skyline	Overstory Removal	90	359
5004	34	Live Skyline	Group Selection	20	203
5005	7	Live Skyline	Clearcut w/ Reserves	95	185
5011	12	Live Skyline	Clearcut w/ Reserves	95	331
5012	15	Live Skyline	Clearcut w/ Reserves	90	345
5013	9	Live Skyline	Seed Tree	85	193
Subtotal (in MMBF)					8.4

Units	Acres	Harvest Method	Silvicultural Treatment	Percent Harvest (volume)	Harvest Volume (MBF)
St. John Baptist					
6281	31	Live Skyline	Clearcut w/ Reserves	95	748
6282	23	Helicopter	Overstory Removal	70	474
6283	8	Live Skyline	Clearcut w/ Reserves	95	218
6291	7	Helicopter	Overstory Removal	50	102
6301	22	Helicopter	Overstory Removal	80	525
6303	4	Live Skyline	Clearcut w/ Reserves	95	96
6304	9	Helicopter	Overstory Removal	80	182
6305	17	Live Skyline	Overstory Removal	70	300
6306	8	Live Skyline	Overstory Removal	70	141
6321	6	Live Skyline	Clearcut w/ Reserves	90	136
6322	16	Live Skyline	Clearcut w/ Reserves	90	363
6331	36	Live Skyline	Overstory Removal	80	727
6332	7	Live Skyline	Clearcut w/ Reserves	95	168
6333	11	Live Skyline	Clearcut w/ Reserves	90	250
6334	11	Live Skyline	Clearcut w/ Reserves	95	264
6363	22	Live Skyline	Overstory Removal	60	333
6372	11	Live Skyline	Overstory Removal	70	194
6373	9	Live Skyline	Clearcut w/ Reserves	95	216
6391	3	Live Skyline	Clearcut w/ Reserves	95	72
7001	13	Live Skyline	Clearcut w/ Reserves	95	312
7002	18	Live Skyline	Clearcut w/ Reserves	95	432
7003	7	Live Skyline	Clearcut w/ Reserves	95	168
7004	19	Live Skyline	Clearcut w/ Reserves	95	455
7005	19	Helicopter	Clearcut w/ Reserves	95	455
7006	5	Helicopter	Clearcut w/ Reserves	95	120
7291	14	Helicopter/Live Skyline	Overstory Removal	40	141
7292	12	Helicopter	Clearcut w/ Reserves	85	257
7293	34	Helicopter	Clearcut w/ Reserves	95	815
Subtotal (in MMBF)					8.7
Lisa Creek					
9011	30	Live Skyline	Clearcut w/ Reserves	85	643
9012	17	Live Skyline	Clearcut w/ Reserves	95	408
9021	29	Live Skyline/Helicopter	Clearcut w/ Reserves	90	683
9022	12	Helicopter	Clearcut w/ Reserves	90	281
9023	17	Helicopter	Clearcut w/ Reserves	90	456
9031	21	Helicopter	Overstory Removal	70	435
9041	35	Helicopter	Clearcut w/ Reserves	85	836
9051	41	Helicopter	Overstory Removal	80	923
9052	8	Helicopter	Clearcut w/ Reserves	85	203
9061	8	Helicopter	Clearcut w/ Reserves	85	172
9062	14	Helicopter	Clearcut w/ Reserves	95	336
Subtotal (in MMBF)					5.4
Total (in MMBF)					53.9



Appendix B

Unit Cards for Two Modified Harvest Units



NORTHWEST BARANOF PROJECT HARVEST UNIT CARD

PLANNED HARVEST UNIT MAP

VCU: 292 UNIT NUMBER: 1145 QUAD(s): SITC4SW
 ACRES: 83 VOLUME: 2447 MBF HARVEST VOLUME: 489 MBF
 HARVEST PRESCRIPTION: Group Selection PERCENT VOLUME HARVESTED: 20

Refer to the Logging/Transportation Plan overlay for the indicated aerial photograph to supplement the following intended design of the harvest unit and associated roads.



200 FT CONTOUR INTERVAL

SETTING BOUNDARY



UNIT BOUNDARY



ADJACENT UNIT



NEW SPEC. ROAD



TEMPORARY ROAD



EXISTING SPEC. ROAD



SHORELINE



CLASS III STREAM

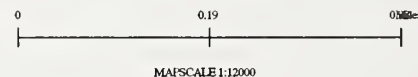


PHOTO POINT



EAGLE TREE



EXISTING CLEARCUTS



SALTWATER AND LAKES



CLASS I & II STREAM BUFFER



LOGGING SYSTEMS:

H HELICOPTER



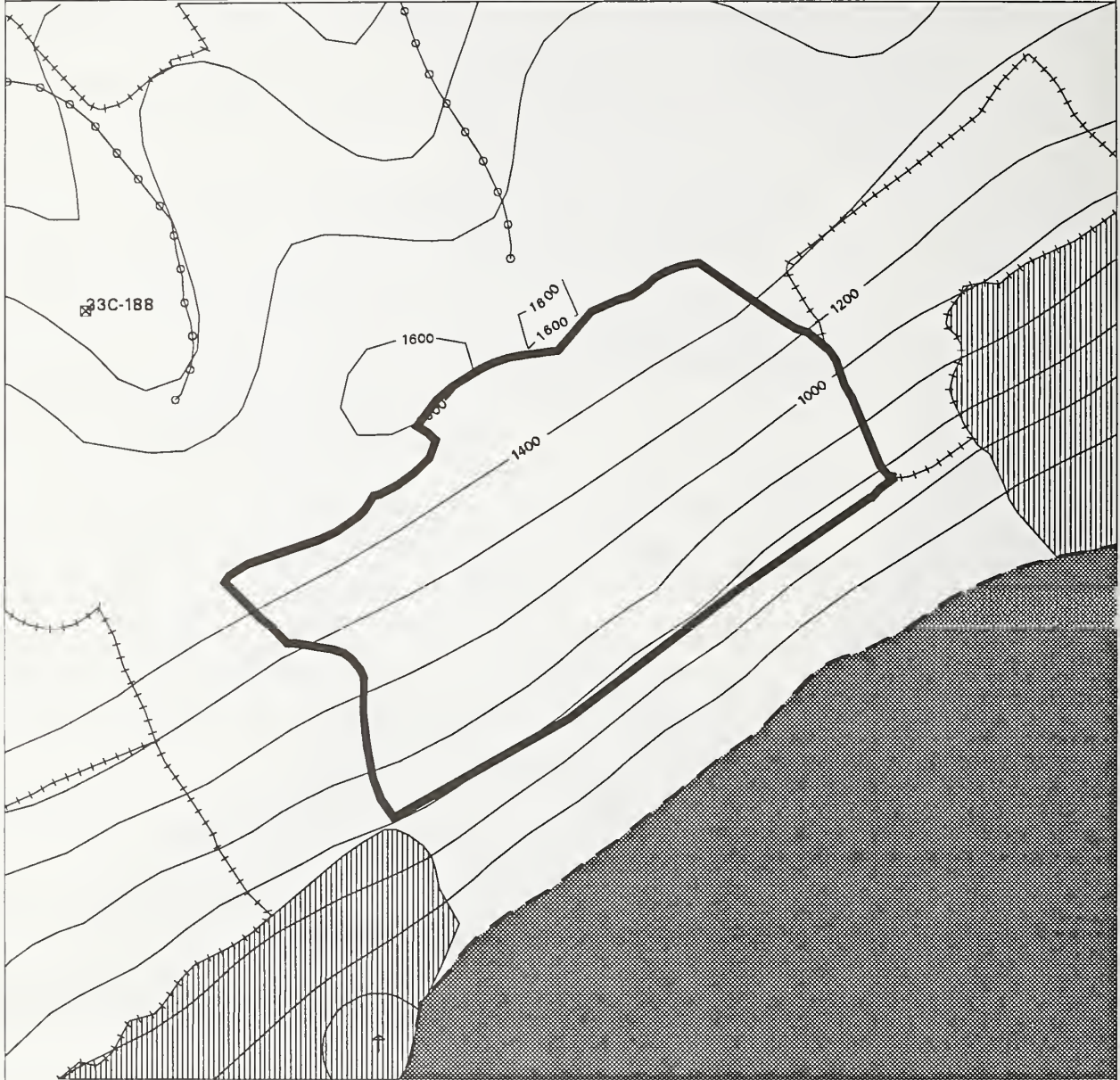
NORTHWEST BARANOF HARVEST UNIT CARD

UNIT: 1145	VCU: 292
<p>{ SILVICULTURE } FIELD REVIEWED: Yes RECOMMENDED BY: B.Dougan SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: Plant association is Western hemlock/blueberry/skunk cabbage, Silvicultural diagnosis for treatment is low canopy retention, Consider replanting, Consider seed tree cut for cedar regen.</p>	
<p>{ TIMBER } FIELD REVIEWED: No RECOMMENDED BY: L.Mork SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: Helicopter yarding required. Road access is uneconomical.</p>	
<p>{ LANDS } FIELD REVIEWED: No RECOMMENDED BY: J.Morrell SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: No concerns</p>	
<p>{ SOILS } FIELD REVIEWED: No RECOMMENDED BY: B.Huecker SPECIALISTS NEEDED DURING LAYOUT: Soil Scientist REMARKS: This unit has not been field reviewed; recommend presence of a soil scientist during layout</p>	
<p>{ FISHERIES } FIELD REVIEWED: No RECOMMENDED BY: B.Lorenz SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: Locate lower unit boundary above deeply incised v-notches along NE side of proposed unit (BMP 13.16).</p>	
<p>{ HYDROLOGY } FIELD REVIEWED: No RECOMMENDED BY: D.Kelliher SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: See Fisheries For Remarks</p>	
<p>{ WILDLIFE } FIELD REVIEWED: No RECOMMENDED BY: C.Hartmann SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: High subsistence value. High habitat value. Recommend leaving snags where possible. Unit is within 1/4 mile of eagle nest tree 12334004. Helicopter yarding should be avoided from March 1 through May 31. If nest is active, helicopter yarding should be avoided from May 31 through August 31 per Interagency Agreement with the USF&WS.</p>	
<p>{ VISUALS } FIELD REVIEWED: Yes RECOMMENDED BY: E.Ouderkirk SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: Within Visual Quality Objective.</p>	
<p>{ RECREATION } FIELD REVIEWED: No RECOMMENDED BY: B.Flynn SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: No specific concerns</p>	
<p>{ HERITAGE } FIELD REVIEWED: Yes RECOMMENDED BY: R.Myron SPECIALISTS NEEDED DURING LAYOUT: None Needed REMARKS: Archeological survey completed for unit 1145 No sites identified.</p>	

NORTHWEST BARANOF PROJECT HARVEST UNIT CARD PLANNED HARVEST UNIT MAP

VCU: 292 UNIT NUMBER: 3012 QUAD(s): SITB5NE
 ACRES: 138 VOLUME: 3899 MBF HARVEST VOLUME: 780 MBF
 HARVEST PRESCRIPTION: Group Selection PERCENT VOLUME HARVESTED: 20

Refer to the Logging/Transportation Plan overlay for the indicated aerial photograph to supplement the following intended design of the harvest unit and associated roads.



200 FT CONTOUR INTERVAL

SETTING BOUNDARY



UNIT BOUNDARY



ADJACENT UNIT



NEW SPEC. ROAD



TEMPORARY ROAD



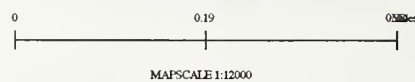
EXISTING SPEC. ROAD



SHORELINE



CLASS III STREAM



LOGGING SYSTEMS:

H HELICOPTER

PHOTO POINT



EAGLE TREE



EXISTING CLEARCUTS



SALTWATER AND LAKES



CLASS I & II STREAM BUFFER



NORTHWEST BARANOF HARVEST UNIT CARD

UNIT: 3012

VCU: 292

{ SILVICULTURE } FIELD REVIEWED: Yes RECOMMENDED BY: B.Dougan
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: Plant association is Sitka spruce/blueberry and mixed
 conifer/blueberry. Silvicultural diagnosis for treatment is low canopy
 retention, Mistletoe infection in and below unit, Clearcut with reserves.

{ TIMBER } FIELD REVIEWED: Yes RECOMMENDED BY: L.Mork
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: Helicopter yarding required, road access uneconomical. Soils
 concerns, no harvest if over 80 % for 100 feet.

{ LANDS } FIELD REVIEWED: No RECOMMENDED BY: J.Morrell
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: No Concerns

{ SOILS } FIELD REVIEWED: Yes RECOMMENDED BY: R.Huecker
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: Recommend at least partial suspension with full suspension over v-
 notches; full suspension is preferred

{ FISHERIES } FIELD REVIEWED: No RECOMMENDED BY: B.Lorenz
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: No concerns.

{ HYDROLOGY } FIELD REVIEWED: No RECOMMENDED BY: D.Kelliher
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: See Fisheries For Remarks

{ WILDLIFE } FIELD REVIEWED: No RECOMMENDED BY: C.Hartmann
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: High subsistence value. Recommend leaving snags where possible and
 leaving reserve trees near edge of unit. Unit is within 1/4 mile of eagle nest
 tree 12325088. Helicopter yarding should be avoided from March 1 through May
 31. If nest is active, helicopter yarding should be avoided from May 31
 through August 31 per Interagency Agreement with the USF&WS. Unit is within
 1500 feet of known mountain goat habitat. If mountain goats are present
 within 1500 feet of unit, helicopter yarding should be avoided from May 15
 through June 15 (kidding season).

{ VISUALS } FIELD REVIEWED: Yes RECOMMENDED BY: E.Ouderkirk
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: Within visual quality objective

{ RECREATION } FIELD REVIEWED: No RECOMMENDED BY: B.Flynn
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: No specific concerns

{ HERITAGE } FIELD REVIEWED: No RECOMMENDED BY: R.Myron
 SPECIALISTS NEEDED DURING LAYOUT: None Needed
 REMARKS: Low probability area

Appendix C

Silvicultural Diagnoses for Two Modified Harvest Units



INTEGRATED SILVICULTURAL DIAGNOSIS

Page 1 of 2

UNIT # 1145 of the NW Baranof Timber Sale

STAND #340, 354 VCU 292 MANAGEMENT AREA C41

ACRES 83 Determined How: GIS By Whom: M.Hawks Date: 1993

Aerial Photo: Year 1987 Flight Line 36 Photo #'s 82

Scale: 1:12000

1/4 Quad ID: Sitka C4SW

SITE CHARACTERISTICS:

Elevation: 100 to 1200 ft. Aspect: E to SE Slope: 20 to 30 %
Landform: Smooth, frequently dissected, shallow incised mountainslopes to broken mountainslopes and hillslopes.

Plant Association: Western hemlock-Alaska yellow cedar/blueberry

Site Index (Farr 50 yr.): 93

Soil: 3225E, 3258D, 3621D, 3643B, 3658D

Parent Material: Colluvium and residuum, compact till, sedge and sphagnum.

Soil Depth in: <20 - 40+ Soil Texture/Drainage: Shallow, somewhat poorly drained mineral soil overlying compact till; deep, well drained mineral soil; shallow, poorly drained organic soils over mineral soils and compact till.

Potential of Mass Failure: Moderate to high

STAND CHARACTERISTICS:

Stand Examination: Type Walk-through exam Date 9-23-93

Stand History: Wind and small slide processes are the primary disturbance agents

Potential Windthrow Hazard: Moderate to high

Damaging Agents: Low to moderate decay. No fluting noted. Light mistletoe noted. Pini present. Light cedar decline evident.

Species Composition (trees 5+" DBH): 20 %WH %MH 60 %AC 20 %SS

Stand Structure: Uneven-aged stand with three canopy layers. Dominants scattered, defective; codoms. more vigorous; intermediates vary in form, vigor.

Ave. Height: 90-105ft. Basal Area: 200 sq.ft. Ave. Age: 250+ yr.

Ave. DBH (trees 5+" DBH): 20-22in. Ave. TPA (trees 5+" DBH):

Ground Cover: 40% rusty menziesia, 90% vaccinium. Vaccinium height 2 ft.

Total Net Sawlog Vol/Acre: MBF

Total Unit Vol: 2447 MBF

NOTE: Volume estimates based on volume class averages obtained by stand exam

SUMMARY OF OTHER RESOURCES AND VALUES:

Helicopter yarding required due to uneconomical road access. Locate lower unit boundary above deeply incised v-notches along NE side of unit. Unit meets visual quality objective. Unit not field reviewed for soils; soil scientist recommended during layout.

LAND MANAGEMENT OBJECTIVES:

Forest Plan: VCU 292 has been allocated through the Tongass Land Management Plan to Land Use Designation (LUD) 4. Opportunities will be provided for intensive resource development where emphasis is primarily on commodity or market resources, while providing for protection of physical and biological productivity.

Landscape and Unit Objectives: Maintain moderate to high canopy retention wherever possible adjacent to previously harvested units. Maintain travel corridors for wildlife between ridge and beach. Minimize negative visual impacts along ferry route, to the extent possible. Maintain cedar as a component in the stand.

TREATMENT ALTERNATIVES TO MEET LANDSCAPE AND UNIT OBJECTIVES:

Potential treatments include group selection and seed tree cut. Shelterwood not considered due to lack of need for understory protection/regeneration for shade tolerant species. Overstory removal not considered due to lack of manageable understory. Clearcut with reserves not considered due to this method not meeting cedar regeneration and visual objectives. Seed tree cut will not meet canopy retention, travel corridor, and visual goals, though it is favorable for regenerating stand. Group selection will meet objectives of canopy retention, visual quality, and wildlife corridors. It will likely not meet the objective of cedar regeneration, unless planting occurs.

RECOMMENDED TREATMENT:

Recommended treatment is group selection. Harvest up to 20% of unit in groups 1-2 acres in size this entry. Plan on cutting cycle of 40-50 years, with up to 20% of stand removed during each entry. Helicopter yard. Rely on natural regeneration, but consider planting cedar if regeneration is inadequate to maintain cedar in regenerating stand.

Prepared By: William R. DouganDate: 11/ 08/ 95Certified By: William R. Dougan

Certified Silviculturist

Date: 11/ 08/ 95

INTEGRATED SILVICULTURAL DIAGNOSIS

Page 1 of 2

UNIT # 3012 of the NW Baranof Timber Sale

STAND #327,328

VCU 292

MANAGEMENT AREA C41

ACRES 138 Determined How: GIS By Whom: M.Hawks Date: 1993
Aerial Photo: Year 1986 Flight Line 33 Photo #'s 188
Scale: 1:12000
1/4 Quad ID: Sitka B5NE

SITE CHARACTERISTICS:

Elevation: 500 to 1600 ft. Aspect: S to S Slope: 38 to 95 %
Landform: smooth, infrequently dissected, shallow incised mountainslopes; broken mountainslopes and hillslopes; mountainslope ravine.
Plant Association: Western hemlock/blueberry/devil's club; mixed conifer/blueberry; Sitka spruce/blueberry
Site Index (Farr 50 yr.): 90
Soil: 3225E, 3638D, 3670C, 3779E
Parent Material: Colluvium and residuum; organics
Soil Depth in: <20 - >40 Soil Texture/Drainage: Shallow to deep, well drained mineral soils; very shallow, well drained organic soil; shallow, very poorly drained organic soils.
Potential of Mass Failure: Low to high

STAND CHARACTERISTICS:

Stand Examination: Type Walk-through exam Date 9-10-93
Stand History: Wind and small slide processes are the primary disturbance agents
Potential Windthrow Hazard: high
Damaging Agents: Moderate to high infection of mistletoe, moderate amount of decay and high amount of defect also present. Pini conks present in stand.
Species Composition (trees 5+" DBH): 35-40 %WH 35-40 %MH %AC 20-30%SS
Stand Structure: Uneven-aged stand with 3 canopy layers. Dominants defective; codoms. vary in health; intermediates variable. Mistletoe throughout all layers
Ave. Height: 105 ft. Basal Area: 440 sq.ft. Ave. Age: 250+ yr.
Ave. DBH (trees 5+" DBH): 25 in. Ave. TPA (trees 5+" DBH):
Ground Cover: 1% rusty menziesia, 50% vaccinium. Vaccinium height 2 ft.

Total Net Sawlog Vol/Acre: MBF Total Unit Vol: 3899 MBF
NOTE: Volume estimates based on volume class averages obtained by stand exam

SUMMARY OF OTHER RESOURCES AND VALUES:

Helicopter yarding required. Oversteepened areas within unit over 80 percent for 100 ft. or more should not be harvested. Within visual quality objective.

LAND MANAGEMENT OBJECTIVES:

Forest Plan: VCU 292 has been allocated through the Tongass Land Management Plan to Land Use Designation (LUD) 4. Opportunities will be provided for intensive resource development where emphasis is primarily on commodity or market resources, while providing for protection of physical and biological productivity.

Landscape and Unit Objectives: Maintain moderate to high canopy retention wherever possible in Rodman Bay area to provide a variety of horizontal and vertical forest structure across the landscape. Protect areas of oversteep ground and v-notches. Maintain travel corridors for wildlife between ridge and beach. Reduce mistletoe infection to improve forest health.

TREATMENT ALTERNATIVES TO MEET LANDSCAPE AND UNIT OBJECTIVES:

Potential treatments include clearcut/reserves and group selection. Overstory removal not considered due to lack of manageable understory. Shelterwood not considered due to lack of need for understory protection/regeneration of shade tolerant species. Seed tree cut not considered due to lack of cedar component in stand. Clearcut/reserves will not meet canopy retention and wildlife travel corridor objectives, but will meet mistletoe reduction objective and is feasible for regeneration. Group selection will meet canopy retention and wildlife travel corridor objectives, but will likely not completely meet the mistletoe reduction objective.

RECOMMENDED TREATMENT:

Recommended treatment is group selection. Harvest up to 20% of unit this entry in groups 1-2 acres in size. Plan for cutting cycle of 40-50 years, with up to 20% removal each entry. Orient groups such that oversteep ground not to be harvested is logically blocked up and groups are logically laid out around these areas to facilitate future harvest. Helicopter yard. Rely on natural regeneration.

Prepared By: William R. DouganDate: 11/ 09/ 95Certified By: William R. Dougan

Certified Silviculturist

Date: 11/ 09/ 95

Mathematics

Chapter 1: Introduction to Mathematics

Section	Topic	Page
1.1	Numbers and Operations	1
1.2	Algebra	2
1.3	Geometry	3
1.4	Trigonometry	4
1.5	Calculus	5
1.6	Statistics	6
1.7	Probability	7
1.8	Mathematical Proofs	8
1.9	Mathematical Modeling	9
1.10	Mathematical History	10

Chapter 2: Numbers and Operations

Section	Topic	Page
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2.2	Integers	12
2.3	Rational Numbers	13
2.4	Real Numbers	14
2.5	Complex Numbers	15
2.6	Number Systems	16
2.7	Number Theory	17
2.8	Number Lines	18
2.9	Number Properties	19
2.10	Number Operations	20

Chapter 3: Algebra

Section	Topic	Page
3.1	Linear Equations	21
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3.3	Cubic Equations	23
3.4	Polynomial Equations	24
3.5	Rational Equations	25
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3.8	Trigonometric Equations	28
3.9	Algebraic Proofs	29
3.10	Algebraic Modeling	30

Chapter 4: Geometry

Section	Topic	Page
4.1	Points, Lines, and Planes	31
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4.7	Area and Perimeter	37
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4.9	Geometric Proofs	39
4.10	Geometric Modeling	40

Appendix D

Road Management Objectives

RMO DEFINITIONS

Road Status:

- E = Existing road.
- E(R) = Existing road, scheduled for reconstruction.
- P = Proposed for construction.

Service Life (the length of time that a facility is expected to provide a specified service):

Intermittent service road = A long-term road developed and operated for periodic service.

Short-term road = A road developed and operated for a limited period of time (less than 10 years).

Functional Classification (the way in which a road services land and resource management needs and the character of service it provides):

- A = Arterial road. Provides service to large land areas and usually connect with other arterial roads or public highways.. (Due to the remoteness of the 8-Fathom Project Area, and the fact that the road systems planned for the area are small and not interconnected, no roads are classified as arterials.)
- C = Collector road. Serves smaller land areas than an arterial road. Usually connects arterial roads to local roads or terminal facilities.
- L = Local road. Connects terminal facilities with other local, collector, or arterial roads, and public highways. Usually local roads are for a single purpose, e.g. timber harvest.

Post-Harvest Maintenance Level (the level of service provided by, and maintenance required for, a specific road after harvest):

Level 1 = Level of maintenance assigned to intermittent service roads during the period they are not open and maintained for motor vehicle traffic. At this level, basic custodial maintenance is performed to keep damage to adjacent resources at an acceptable level and to perpetuate the road to facilitate future management activities.

Level 1 is also assigned, in the 8-Fathom RMO summary tables, to short-term road after the purpose for which they were constructed is completed. At this level, drainage structures are removed and the roadbed is waterbarred, to prevent damage to adjacent resources.

Level 2 = Level of maintenance normally assigned to roads needed by high clearance vehicles between periods of harvest. Planned post-harvest vehicle traffic in the 8-Fathom Project Area is expected to be either high clearance vehicles (HCV) or all-terrain vehicles (ATV), to accomplish administrative and recreation access objectives. Roads will be logged out and brushed as necessary to provide passage for ATV's. The road prism will

be maintained to provide for passage of high clearance vehicles. Barricades will be placed at the entrance of each road, maintained at this level, for ATV access, to effectively block vehicles greater than 50" in width.

Post-Harvest Public/Recreation Traffic Strategies (strategies employed where necessary to control any class or type of traffic. Use to prevent damage to the roadway, to abate unsafe traffic conditions, or to control use to meet other specific management direction such as protecting wildlife habitat or achieving semiprimitive recreation objectives):

Encourage = Engourage public use by means of appropriate signing, public notification, and active maintenance of the road prism.

Accept = Public use is allowed , but not encouraged, while road is maintained for administrative access.

Discourage = Public access is discouraged by means of allowing alder growth at road entrance, non-removal of blowdown, or road prism deterioration within acceptable environmental limits. Road may also be signed to discourage use: "Not Maintained for Public Traffic".

Eliminate = Road is physically blocked to after sale traffic. Where prescribed for long-term intermittent roads, this strategy is achieved by means of placement of impassable barricades at road entrances. On short-term roads, removal of drainage structures effectively block traffic.

Prohibit = Public access is prohibited by a road order (i.e. CFR closure). Implementation of this strategy on remote road systems such as 8-Fathom, may require the installation of gates, in addition to public notification and appropriate signing.

Prohibit Seasonally = Road is closed to public access at times during the normal operating year. For all alternatives, seasonal access prohibitions will be used if necessary to mitigate impacts to wildlife and subsistence resources (e.g. closure during either-sex deer hunting season, goshawk nest area). Administrative and permitted use of the roads will continue during closure periods, but only for specific permitted uses. Seasonal closures may be used in combination with cooperative efforts with fish and game protective agencies.

NWB ROAD MANAGEMENT OBJECTIVES

TRAFFIC CODES: LCV = Low Clearance Vehicle HCV = High Clearance Vehicle
 RV = Recreation Vehicle ATV = All Terrain or Off-Road Vehicle
 Ped = Pedestrian

ALTERNATIVE ROAD

VOLUME	ROAD NUMBER	ROAD MILES	ROAD STATUS	SERVICE LIFE	FUNCTION CLASS	POST-HARVEST MAINT. LEVEL	POST-HARVEST ACCESS NEEDS/TRAFFIC STRATEGIES				POST-HARVEST RESOURCE CONCERNS (SEE ROAD CARDS)			
							FUTURE COMML VOL	SILVIC/ ADMIN	PUBLIC/ RECREATION	HYDRO/ SOILS	W/L	SUB- SIS.	FISH	
287	7525	1.2	P	INTERMITTENT	C	2			ACCEPT					
288	7525	3.9	P	INTERMITTENT	C	2		-	ACCEPT				-	
291	7587	5.1	E	INTERMITTENT	C	1			ELIMINATE	-		-		
292	7586	1.1	E	INTERMITTENT	C	1			ELIMINATE	-		-		
	7587	2.8	E	INTERMITTENT	C	1			ELIMINATE	-		-		
	75873	2.0	P	INTERMITTENT	L	1			ELIMINATE					
	75882	1.6	P	INTERMITTENT	C	2			DISCOURAGE					
	758823	0.4	P	INTERMITTENT	L	1			ELIMINATE					
293	75882	1.8	E/P	INTERMITTENT	C	1			ELIMINATE					
	7722W	1.1	E	INTERMITTENT	C	1			ELIMINATE					
	7728	0.3	E	INTERMITTENT	C	1			ELIMINATE					
300	75831	0.9	P	INTERMITTENT	C	2			ACCEPT	-		-		
	758316	0.5	P	INTERMITTENT	L	1			ELIMINATE					
301	7558	2.3	E	INTERMITTENT	C	1			ELIMINATE	-		-		
	75581	1.0	P	INTERMITTENT	C	1			ELIMINATE					
302	7583	1.1	E	INTERMITTENT	C	2		-	ACCEPT			-		
	75831	5.1	E/P	INTERMITTENT	C	2			ACCEPT					
	758315	0.8	P	INTERMITTENT	L	1			ELIMINATE	-		-		





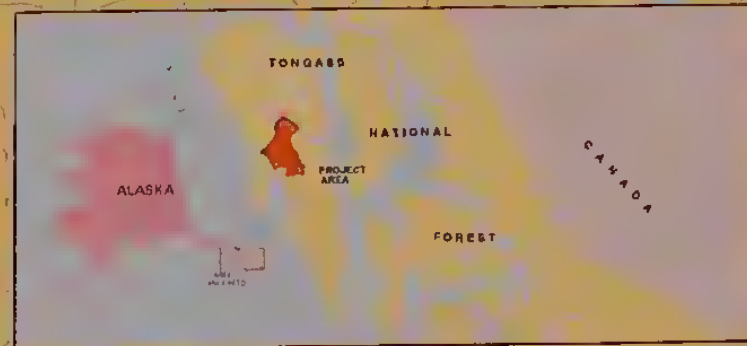
US FOREST SERVICE
ALASKA REGION
NORTHWEST BARANOF
RECORD OF DECISION
Final Environmental Impact Statement
February 1996

Scale in Miles
One inch represents 1.6 miles

LEGEND

- NATIONAL FOREST - National Forest Lands outside the project boundary.
- UNCONVEYED LANDS - Lands selected by the State of Alaska and Native allotment applications which have not yet been conveyed.
- STATE, MUNICIPAL, AND PRIVATE LANDS - Includes lands owned by Native corporations.
- WILDERNESS - National Forest Lands designated as wilderness.
- Old growth forest areas which are deferred from harvest by this project to meet TLMP retention requirements.
- HARVESTED AREA - Timber harvested prior to this project.
- HARVEST AREA - Timber harvest planned by other projects but not yet harvested.
- HARVEST AREA PRESCRIPTIONS - Units proposed for harvest.
- GROUP SELECTION
- CLEARCUT with RESERVES
- OVERSTORY REMOVAL
- SEED TREE
- ROAD - Proposed for construction.
- ROAD - Existing roads proposed for reconstruction.
- ROAD - Existing road.
- STREAM - Class 1 stream with anadromous or high quality sport fish habitat.
- STREAM - Class 2 stream with resident fish populations.
- STREAM - Class 3 stream with no fish, but which influences downstream water quality and fish habitat.
- LOG TRANSFER FACILITY - Proposed for construction.
- HELICOPTER - Log insertion site.
- VCU - Value Comparison Unit.
- PROJECT BOUNDARY - This Environmental Impact Statement is restricted to the National Forest lands within the project area.
The contour interval is 200 feet.
Map published in 1995 by direction of Forest Supervisor, Chatham Area.
Thematic data prepared and map design by Chatham Area GIS.

NOTE: Names shown on this map have not been approved by the U.S. Board of Geographic Names and are intended solely as an aid to navigation.



NORTHWEST BARANOF
RECORD OF DECISION
February 1996



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